Metropolitan Transportation Plan for Clark County

Southwest Washington Regional Transportation Council

METROPOLITAN TRANSPORTATION PLAN

FOR CLARK COUNTY

October, 1999

Preparation of this Plan was funded by grants from the Washington State Department of Transportation, U.S. Department of Transportation (Federal Highways Administration and Federal Transit Administration) and local funds from RTC member jurisdictions

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Agenda Item V
Resolution 10-99-26

STAFF REPORT

TO: Southwest Washington Regional Transportation Council Board of Directors

FROM: Dean Lookingbill, Transportation Director

DATE: September 28, 1999

SUBJECT: **Metropolitan Transportation Plan Update, Resolution 10-99-26**

BACKGROUND

The Metropolitan Transportation Plan (MTP) for Clark County is the long-range regional transportation plan for the region. It has a twenty-year planning horizon and represents the collective strategy for developing a regional transportation system that provides mobility and accessibility for personal travel and goods movement. The Plan also supports existing and planned economic development. The MTP identifies future travel needs, recommends policies/strategies, and identifies implementation programs for meeting future needs. The Metropolitan Transportation Plan (MTP) for Clark County was adopted by the RTC Board of Directors in December 1994, was subsequently updated in December 1996, and amended in 1997, 1998 and in April, 1999. Federal and state law requires that the Plan undergo periodic review. Attached is a copy of the Metropolitan Transportation Plan for Clark County.

The proposed MTP update extends the horizon year of the MTP to the year 2020 which ensures compliance with the federal requirement to have a twenty-year plan.. A forecast population of 473,898, 192,716 households and 227,910 employment is assumed as the basis for the MTP update. The MTP has been developed with technical review and input provided by Regional Transportation Advisory Committee (RTAC) members and policy review provided by the RTC Board. The proposed update was made available to the public at the joint RTC/WSDOT transportation booth at the Clark County Fair (August 6 - 15, 1999) and at a public meeting held on September 16, 1999.

POLICY IMPLICATION

The MTP represents the framework plan and policies for development of the regional transportation system. The 2000-2002 Metropolitan Transportation Improvement Program (MTIP), proposed for adoption at the October, 1999 RTC Board meeting, is consistent with the Plan. RTC, as the Regional Transportation Planning Organization (RTPO), must certify that there is consistency between the MTP and the transportation elements of local comprehensive plans required under the Growth Management Act (GMA) and that the transportation elements conform with the GMA's requirements. The evaluation of local transportation elements was carried out by RTC in 1994 and re-evaluated in 1997. The certification is re-affirmed with the

MTP update. Air quality conformity analysis is carried out using the assumed list of MTP projects as outlined in Appendix A of the Plan. Air quality analysis confirms that the MTP complies with the mobile emissions budgets specified in the air quality maintenance plans. Update of the prioritization of regional transportation projects, carried out with the 1998 MTP update, is deferred until the conclusion of significant regional transportation planning studies now underway in the region. The studies include the I-5/I-205 North Corridor Study, the I-205 Strategic Corridor Pre-Design Study, and the I-5 Trade Corridor Study.

BUDGET IMPLICATION

Regular update and amendment of the adopted MTP is a requirement for the receipt of federal transportation funds. Federal regulations require that the MTP contain a financial plan that demonstrates consistency between proposed transportation investments and projected sources of revenue. After revenues are set aside for system maintenance, preservation and operating costs, the remaining revenues are available to fund capital improvements to the regional transportation system identified in the MTP. Attached is the MTP financial analysis carried out to support the proposed update to the MTP for Clark County.

ACTION REQUESTED

Adoption of Resolution 10-99-26, "Metropolitan Transportation Plan Update".

ADOPTED this _____ day of _____ 1999,

by the Southwest Washington Regional Transportation Council.

SOUTHWEST WASHINGTON
REGIONAL TRANSPORTATION COUNCIL

ATTEST:

_____
Judie Stanton
President of the Board

_____
Dean Lookingbill
Transportation Director

Attachments

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Regional Transportation Advisory Committee Members

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CHAPTER 1

INTRODUCTION: MTP VISION, PURPOSE AND GOALS

The Metropolitan Transportation Plan (MTP) for Clark County is the region's principal transportation planning document. It represents a regional transportation plan for the metropolitan area of Clark County developed through a coordinated process between local jurisdictions in order to develop regional solutions to transportation needs. The *first Regional Transportation Plan* (RTP) for Clark County was adopted in December 1982. An *Interim Regional Transportation Plan*, which acted as a framework for development of Growth Management Act (GMA) transportation elements, was adopted in September, 1993. The MTP for Clark County was adopted in December, 1994, updated in 1996 and subsequently amended in 1997, 1998 and in April, 1999. This updated MTP version extends the horizon year of the MTP to the year 2020. It is intended to be a plan to meet transportation needs over the next 20 years and a plan to direct the metropolitan transportation planning process. This introductory chapter presents the vision, purpose, goals, scope, statutory requirements and decision-making process involved in development of the MTP for Clark County.

VISION

The MTP is a collective effort to address the development of a regional transportation system which will facilitate planned economic growth and maintenance of the region's quality of life.

PURPOSE

The MTP identifies future regional transportation system needs and outlines transportation plans and improvements necessary to maintain adequate mobility within and through the region. The region has to plan for a future regional transportation system which will adequately service the population and employment growth projected for Clark County. The transportation system is multi-modal and includes the region's highway system for transportation of people and goods, the transit system, pedestrian and bicycle facilities, as well as ports, airports and rail facilities of regional significance. Intermodal connecting points are a vital part of the system. The MTP's goals, objectives and policies help to guide jurisdictions and agencies involved in transportation planning and programming of projects throughout Clark County.

GOALS

The goal of the MTP is to outline a long-range plan which will provide for the highest level of transportation services and mobility for Clark County, at the most cost-effective price and with the least environmental impact (see Figure 1-1).

- An acceptable level of mobility for personal travel and goods movement throughout the regional transportation network and adequate access to locations throughout the region.

- The MTP identifies cost-effective recommendations; those solutions that provide adequate mobility to the users while minimizing total system costs.

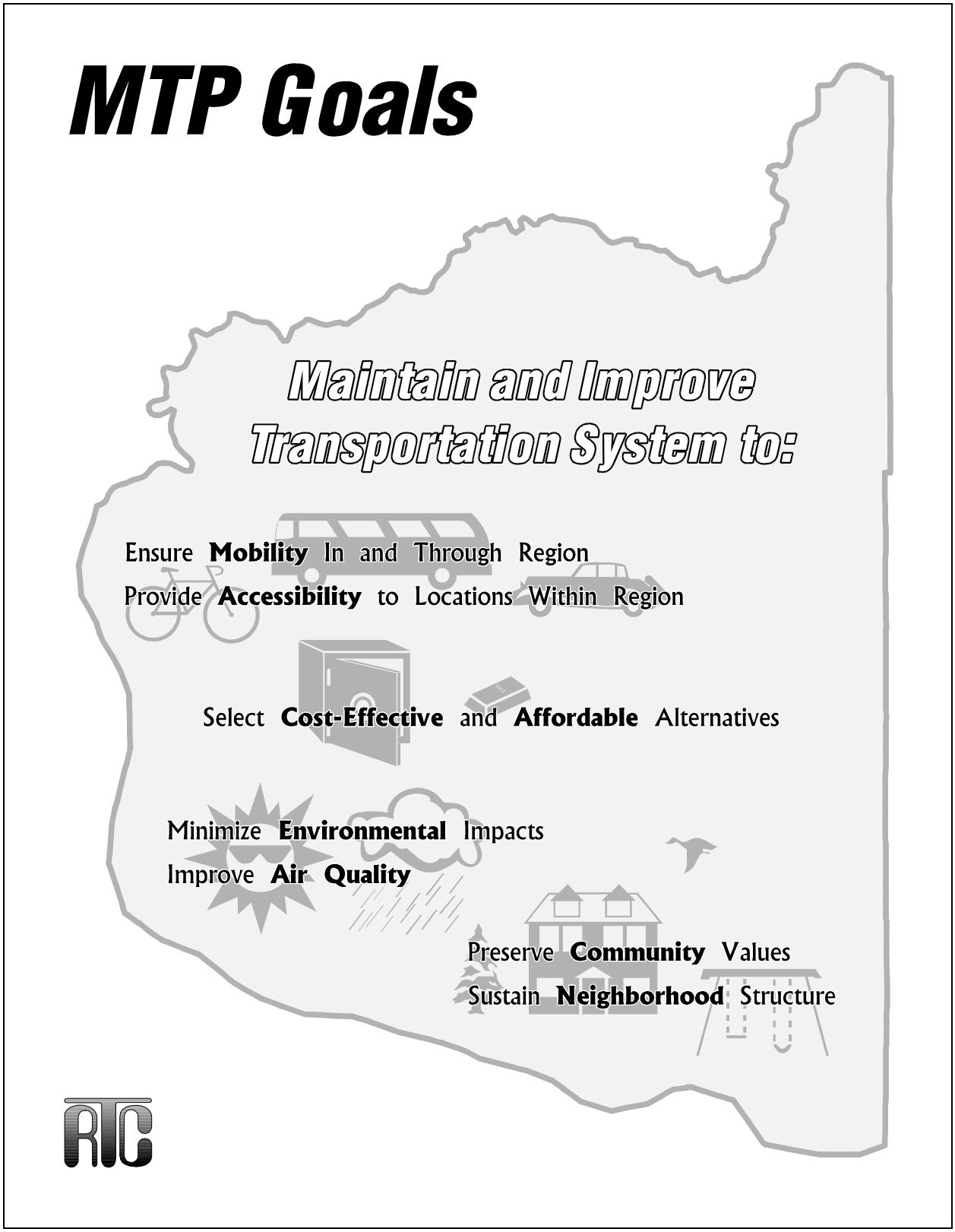


Figure 1-1: RTP Goals

- The MTP recommends transportation improvements which will minimize impact to the environment. Recommended transportation improvements should be consistent with community environmental values and neighborhood structures.

There is consistency between the general MTP goals outlined above and the policies established by local jurisdictions and agencies working together through the Growth Management Act (GMA) planning process. Excerpts from the adopted *Community Framework Plan* and the County-wide Planning Policies relating to transportation are re-printed below and these constitute the Principles and Guidelines with which the transportation elements of local comprehensive plans required under the Growth Management Act are reviewed for certification purposes.

Transportation (5.0)

The Transportation Element is to implement and be consistent with the land use element. The *Community Framework Plan* envisions a shift in emphasis of transportation systems from private vehicles to public transit (including high-capacity transit and light rail), and non-polluting alternatives such as walking and bicycling. The following policies are to coordinate the land use planning, transportation system design and funding to achieve this vision.

COUNTY-WIDE PLANNING POLICIES (5.1)

a. Clark County, Metropolitan Planning Organization (MPO) and the Regional Transportation Planning Organization (RTPO), state, bi-state, municipalities, and C-TRAN shall work together to **establish a truly regional transportation system** which:

   1) **reduces reliance on single occupancy vehicle transportation** through development of a **balanced transportation system** which emphasizes **transit**, **high capacity transit**, **bicycle and pedestrian improvements**, and **transportation demand management**;

   2) encourages **energy efficiency**;

   3) recognizes **financial constraints**; and

   4) **minimizes environmental impacts** of the transportation systems development, operation and maintenance.

b. Regional and bi-state transportation facilities shall be planned for within the context of county-wide and **bi-state air, land and water resources**.

c. The State, MPO/RTPO, County and the municipalities shall adequately **assess** the **impacts of regional transportation facilities** to maximize the benefits to the region and local communities.

d. The State, MPO/RTPO, County and the municipalities shall strive, through **transportation system management strategies**, to optimize the use of and maintain existing roads to minimize the construction costs and impact associated with roadway facility expansion.

e. The County, local municipalities and MPO/RTPO shall, to the greatest extent possible, establish **consistent roadway standards**, **level of service standards** and **methodologies**, and **functional classification schemes** to ensure consistency throughout the region.

f. The County, local municipalities, C-TRAN and MPO/RTPO shall work together with the business community to develop **a transportation demand management strategy** to meet the goals of state and federal legislation relating to transportation.

g. The State, MPO/RTPO, County, local municipalities and C-TRAN shall work cooperatively to consider the development of transportation corridors for **high capacity transit** and adjacent land uses that support such facilities.

h. The State, County, MPO/RTPO and local municipalities shall work together to establish a **regional transportation system** which is planned, balanced and compatible with planned land use densities; these agencies and local municipalities will work together to ensure coordinated transportation and land use planning to achieve adequate mobility and movement of goods and people.

i. State or regional facilities that generate substantial travel demand should be sited along or near major transportation and/or public transit corridors.

SCOPE

The MTP for Clark County takes the year 2020 as its horizon year. Travel demand for the region is forecast for this future year and improvements to the transportation system are recommended based on the projected travel demand.

The area covered by the MTP is the whole of Clark County (see Figure 1-2). Clark County is located in the southwestern part of the state of Washington at the head of the navigable portion of the Columbia River. The Columbia River forms the western and southern boundaries of the county and provides over 41 miles of river frontage. The county's northern boundary is formed by the Lewis River and to the east are the foothills of the Cascades. Urban Clark County is part of the northeast quadrant of the Portland, Oregon metropolitan area.

People and goods move throughout the regional transportation system without consideration for city, county, and state boundaries. Transportation problems extend beyond jurisdictional boundaries so the MTP analyzes the future transportation needs for the entire region and, at the same time, provides a cooperative framework for coordinating the individual actions of a number of jurisdictions.

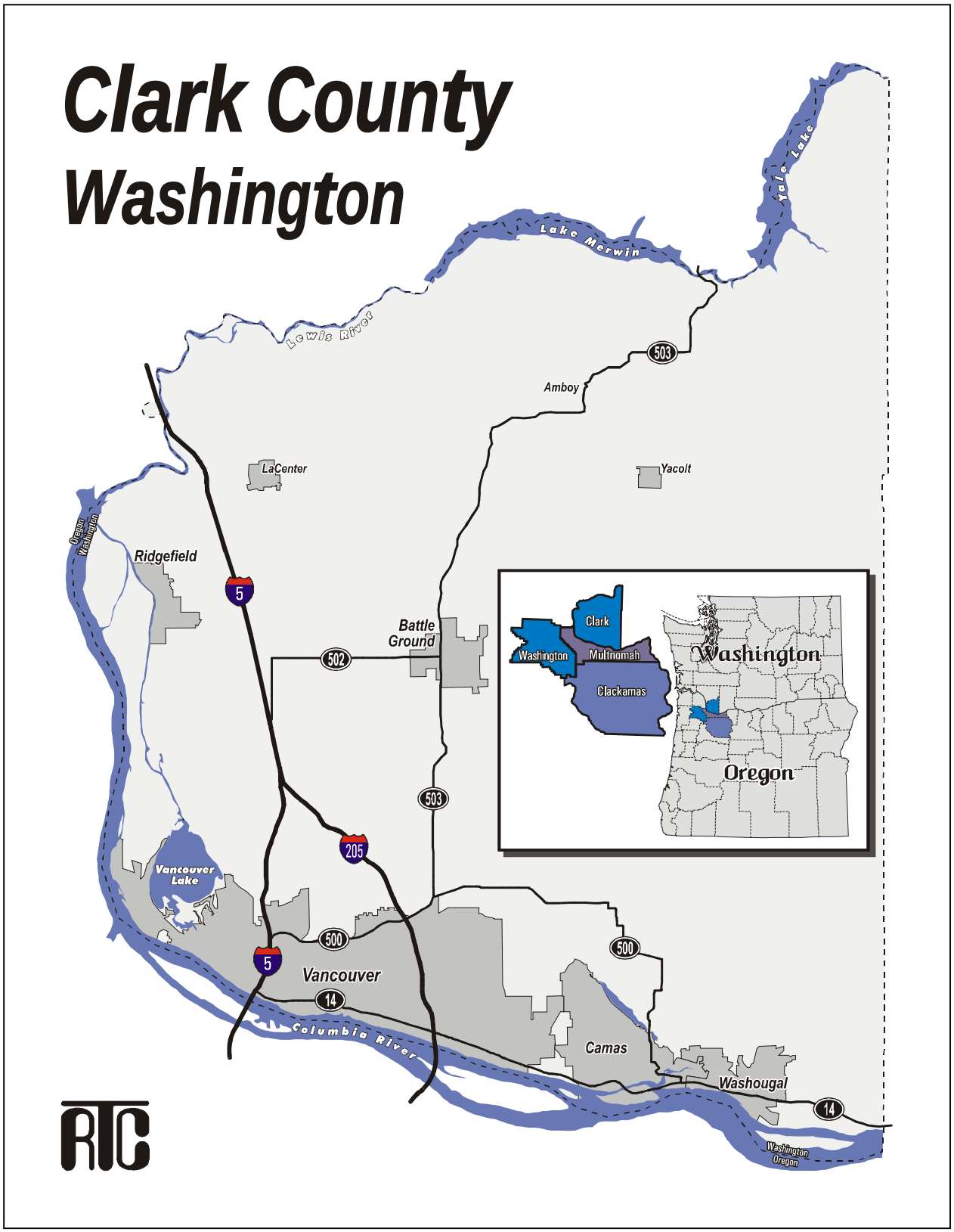


Figure 1-2: Clark County Washington (location map)

TRANSPORTATION ISSUES ADDRESSED IN MTP

- Transportation system maintenance, preservation and safety.
- Emphasis on existing regional corridors to minimize neighborhood disruption.,
- Development of corridors to improve economic development potential.,
- The role of transit in serving peak hour commuters and in serving general transportation needs in both peak and non-peak hours.
- The future role for high capacity transit alternatives in Clark County.
- Accessibility across the Columbia River in terms of capacity, economic development, corridor location, connecting roadways.
- Encouragement of non-motorized transportation modes.
- The role of system management (TSM) and demand management (TDM) techniques in transportation provision.
- Federal, state, local and private sources of revenue for transportation capital and maintenance projects.
- Air quality impacts of regional transportation system improvements.
- The role of the private sector in transportation system development.
- Intermodal transportation facilities, such as ports, rail terminals and airports.

STATUTORY REQUIREMENTS

FEDERAL

The joint Federal Highways Administration (FHWA) and Federal Transit Administration (FTA) regulations require that, as a condition for receiving federal transportation funding, urbanized areas with over 50,000 population establish a "continuing, cooperative, and comprehensive transportation planning process". The process should result in transportation plans and programs which are consistent with the comprehensive land use plans of all jurisdictions within the region.

Federal regulations require a designated **Metropolitan Planning Organization** (MPO) be the forum for cooperative decision-making by principal elected officials of the region's general purpose local governments. Southwest Washington Regional Transportation Council (RTC) was designated as the Metropolitan Planning Organization (MPO) for Clark County by agreement of the Governor of the State of Washington and units of general purpose local governments (representing at least 75 percent of the affected population, including the central cities) on July 8th of 1992. RTC succeeded the Intergovernmental Resource Center (IRC) as MPO for the Clark

County region. With passage of the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991, Clark County became a federally-designated Transportation Management Area (TMA).

The Southwest Washington Regional Transportation Council, as the MPO, in cooperation with the Washington State Department of Transportation and C-TRAN, Clark County's transit operator, is responsible for carrying out federal transportation planning requirements. Federal requirements include the development of a long-range Metropolitan Transportation Plan.

The first RTP for Clark County was developed by the MPO and was adopted in December 1982. An *Interim Regional Transportation Plan for Clark County* was adopted in September, 1993. The *Interim RTP* served to establish regional transportation policies and to provide consistency with the regional Transportation Improvement Program (TIP). This MTP version provides not only a bench-mark document for local decision-makers but also meets federal requirements of the FHWA and FTA. Prior to the development of the 1982 RTP, the Portland-Vancouver Metropolitan Area Transportation Study (PVMATS) served as the long-range plan for Portland and Vancouver. PVMATS was carried out by the Columbia Regional Association of Governments (CRAG) and listed a number of highway projects needed in the region by 1990.

The federal government requires the MPO to develop a Metropolitan Transportation Plan, to meet the requirements of the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 and its successor Act, the Transportation Equity Act for the 21st Century (TEA-21) of 1998. In air quality non-attainment areas, review and Plan updates are required at least every three years. Updates are to confirm the Plan's validity and its consistency with developing trends in transportation system use and conditions. The MPO also has to select and prioritize transportation projects for programming in a **Transportation Improvement Program** (TIP) to be updated at least every two years. The TIP specifies federally funded transportation projects to be implemented during the next three years. Projects are listed in the TIP based upon a realistic estimate of available revenues. Projects programmed for funding in the TIP have to be consistent with the adopted MTP.

The MTP should be a central mechanism for structuring effective investments to enhance transportation system efficiency. It should consist of short- and long-range strategies to address transportation needs. The transportation plan is to be consistent with the region's comprehensive long-range, land use plans, development objectives, and the region's overall social, economic, environmental, system performance, and energy conservation goals and objectives.

The urban transportation planning process to be followed in the development of a transportation plan shall include:

- consideration of the social, economic and environmental effects in support of Intermodal Surface Transportation Efficiency Act (1991) and the Clean Air Act,

- provisions for citizen participation,

- no discrimination on the grounds of race, color, sex, national origin, or physical disability under any program receiving federal assistance,

- special efforts to plan public mass transportation facilities and services for the elderly and for people with disabilities,

- consideration of energy conservation goals and objectives,

- involvement of appropriate public and private transportation providers, and

- the following activities as necessary, and to the degree appropriate, for the size of the metropolitan area and the complexity of its transportation problems:

    - analysis of existing conditions of travel, transportation facilities, vehicle fuel consumption and systems management,

    - projections of urban area economic, demographic, and land use activities consistent with urban development goals, and projections of potential transportation demands based on these activity levels,

    - evaluation of alternative transportation improvements to meet area-wide needs for transportation and make more efficient use of existing transportation resources and reduce energy consumption,

    - refinement of transportation plan by corridor, transit technology, and staging studies; and subarea, feasibility, location, legislative, fiscal, functional classification, institutional, and energy impact studies, and

    - monitoring and reporting of urban development, transportation and energy consumption indicators and a regular program of reappraisal of the transportation plan,

The MTP is to meet federal planning requirements outlined above and should comply with provisions set forth in the Intermodal Surface Transportation Efficiency Act (ISTEA) and the Transportation Equity Act for the 21st Century (TEA-21), the Clean Air Act, the Americans with Disabilities Act and Title VI of the Civil Rights Act of 1964. ISTEA outlined sixteen planning factors which were to be incorporated into the regional transportation planning process in non-attainment areas for carbon monoxide or ozone. TEA-21 legislation consolidates these planning factors into **seven** broad areas to be considered in the planning process. The growing importance of operating and managing the transportation system is recognized as a focal point for transportation planning. The seven areas are listed below:

1. Support the **economic vitality** of the metropolitan area, especially by enabling global competitiveness, productivity and efficiency;

2. Increase the **safety** and **security** of the transportation system for motorized and non-motorized users;

3. Increase the **accessibility** and **mobility** options available to **people** and for **freight**;

4. Protect and enhance the **environment**, promote **energy conservation**, and improve **quality of life**;

5. Enhance the integration and **connectivity** of the transportation system, across and between modes, for people and freight;

6. Promote efficient **system management** and **operation**; and

7. Emphasize the **preservation** of the existing transportation system.

STATE

Metropolitan Transportation Plans are expected to be consistent with the policies and objectives outlined in the *Transportation Policy Plan for Washington State*. The first State Policy Plan was submitted to the Washington State Legislature by the Washington State Department of Transportation (WSDOT) in January, 1990. Since the 1990 Policy Plan was published, WSDOT has issued annual updates. Each year, a number of issues are selected to be the focus for policy plan development. In 1994 the focus issues were Intermodal Transportation, Weight Restrictions and Road Closures, Telecommunications and Transportation Linkages and Proposed Financial Policies for Funding Washington's Transportation System. In 1995 the report to the Legislature focused on issues affecting the transportation system. The State of Washington has developed a *Statewide Multimodal Transportation Plan* which addresses transportation facilities owned and operated by the state, including state highways, the Washington State Ferries, and state-owned airports. It also addresses facilities and services that the state does not own, but has an interest in. These include public transportation, freight rail, intercity passenger rail, marine ports and navigation, non-motorized transportation, and aviation. Planning is carried out in cooperation with local governments, regional agencies, and private transportation providers to ensure that Washington's transportation system provides convenient, reliable, safe, efficient, and seamless connections and services to all citizens. Steps in the State's planning process included definition of services objectives for the state's transportation systems, determination of system deficiencies where systems will not meet service objectives over the next twenty years, proposal of strategies to address identified deficiencies and monitoring of programs and projects implemented from the Plan to assess the effectiveness of the strategies and to identify new deficiencies for future Plan updates. State highway needs are identified in the *State Highway System Plan (HSP), 1997-2016* (WSDOT; March, 1996). An updated System Plan (1999-2018) is scheduled for adoption by the Washington State Transportation Commission in December of 1997. In December, 1996 the *Public Transportation and Intercity Rail Passenger Plan for Washington State* was completed. The MTP should attain and maintain consistency with the *Statewide Multimodal Transportation Plan*.

Recommendations in the State Policy Plan include:

- establishment of a regional transportation planning process to coordinate transportation, economic development and land use activities; providing a framework for cities, counties, the state, ports, transit agencies and other interest to coordinate planning activities,
- preservation of roads, streets, highways, bridges, transit, railroads, airports, bikeways and walkways with sufficient state funding provided for studying needs and provision of certain transportation facilities,
- an urban mobility policy emphasizing the movement of people rather than vehicles; with provision for efficient alternatives to one-person vehicles,
- a requirement that transportation improvements be reasonably concurrent with growth,
- reduction of travel demand by such methods as increasing parking fees, flex-time and peak travel restrictions,
- increased efforts to provide improved transportation system access for the elderly and persons with disabilities,
- coordination of the many federal, state and local public transportation programs for rural areas,
- further study of the transportation needs for the mobility of rural residents. In rural areas intermodal connection terminals at the community level were seen to be important,
- provisions for bicyclists and pedestrians with emphasis given to the importance of providing for their safety in accessing transportation facilities,
- provisions for commodity movements and the determination of needed alignments for routes that serve ports as well as mitigation of impacts of urban congestion on freight movement. State assistance for preservation of freight rail service was recommended,
- the need to maximize multiple uses of rights of way, and
- provision of state support for regional passenger rail transit authorities.

WASHINGTON STATE'S REGIONAL TRANSPORTATION PLANNING PROGRAM

Washington State's Growth Management Act (ESHB 2929), enacted in 1990, approved the Regional Transportation Planning Program which created a formal mechanism for local governments and the state to coordinate transportation planning for regional transportation facilities. The Growth Management Act (GMA) authorized the creation of Regional Transportation Planning Organizations (RTPOs) by units of local government. Southwest Washington Regional Transportation Council (RTC) is the designated RTPO for the three-county area of Clark, Skamania and Klickitat. In 1994, SHB 1928 was passed by Washington's

legislature which clarifies the duties of the RTPO outlined in the GMA and further defines RTPO planning standards.

The duties of the RTPO, as outlined in the GMA and SHB 1928, include:

- designation of the regional transportation system,
- development of a six-year **Transportation Improvement Program** (TIP) to include regionally significant city road projects, county road projects, transit capital projects and WSDOT transportation projects. The TIP must include a financial plan.
- development of a **Regional Transportation Plan** (RTP) to include a regional transportation strategy, identification of existing and planned facilities and programs, Level of Service standards, a financial plan, assessment of regional development patterns and capital investment, a regional transportation approach and the Plan should establish the relationship of High Capacity Transit to other public transportation providers. The concept of least cost planning was introduced in SHB 1928. Future RTP (MTP) updates should be based on a least cost planning methodology once the concept is further defined and developed in relation to transportation applications.
- review of the Regional Transportation Plan at least every two years to ensure that it is current.
- establish guidelines and principles for development and evaluation of the transportation elements of local comprehensive plans and certify that they meet the requirements of Section 7 of the GMA and are consistent with the MTP.

It is intended that the Regional Transportation Planning Program be integrated with, and augment, the federally-required Metropolitan Planning Organization (MPO) Program. The RTPO has to be the same organization as that designated as the current MPO. The regional transportation planning program extends transportation planning by the RTPO's to rural areas not covered by the federal program. It is intended that the program tie in and be consistent with local comprehensive planning in urban, and rural areas.

It is intended that the regional transportation planning process follow the listed principles. The process should:

- guide the improvement of the regional transportation system
- use regionally consistent technical methods and data
- consider environmental impacts
- ensure early and continuous public involvement
- be consistent with the local comprehensive planning process

- be an ongoing process
- incorporate multimodal planning activities
- address major capacity expansion and operational improvements to the regional transportation system
- be a partnership, including federal, state, and local governments, special districts, private sector, general public and others during conception, technical analysis, policy development and decision-making

RTC will continue the previously established regional transportation planning process for the MPO, supplemented by the regional transportation planning standards formulated by WSDOT for RTPOs, in order to meet the requirements of the state's 1990 Growth Management Act. To comply with the state standards the MTP will include the following components:

- description of the designated regional transportation system,
- regional transportation goals and policies. Level of service standards will be established and used to identify deficient transportation facilities and services,
- regional land use strategy. Existing and proposed land uses defined on local comprehensive land use plans determine the regional development strategy and will be used as the basis for transportation planning,
- identification of regional transportation needs. An inventory of existing regional transportation facilities and services, identification of current deficiencies and forecast of future travel demand will be carried out,
- development of financial plan for necessary transportation system improvements,
- regional transportation system improvement and strategy plan. Specific facility or service improvements, transportation system management and demand management strategies will be identified and priorities determined,
- establishment of a performance monitoring program. The performance of the transportation system will be monitored over time. The monitoring methodology, data collection and analysis techniques to be used will be outlined, and
- plans for implementation of the MTP.

State legislation of significance in regional transportation planning includes the Growth Management Act (1990), High Capacity Transit legislation (1990), the Clean Air Washington Act (1991), the Commute Trip Reduction law (1991) and SHB 1928 (1994).

INTERGOVERNMENTAL COORDINATION - CLARK COUNTY MTP UPDATE DEVELOPMENT PROCESS

In order to make the MTP not only a Plan to provide carefully thought-out solutions to transportation issues and problems but also a Plan that all jurisdictions can subscribe to and implement, the regional transportation planning committee structure has been established. The committees established by RTC to carry out MPO/RTPO activities work to strengthen the process of MTP development. Consistent with the 1990 GMA legislation, a three-county RTC Board of Directors has been established to serve the RTPO region. Individual County Committees and Boards also play a part in regional transportation decision-making. Representation on the RTC Board of Directors includes three representatives from Clark County, one from Skamania County, one from Klickitat County, two from the City of Vancouver, one from small cities to the East, one from small cities to the north, one from C-TRAN, and one representative of the Ports of Clark County. The role of, and representation on, the RTC Board of Directors and individual County Policy Boards and Committees is described in the *Bylaws of Southwest Washington Regional Transportation Council* (July 7, 1992) and *Interlocal Agreement for Establishment of the Southwest Washington Regional Transportation Council*. The regional transportation committee structure is outlined in Figure 1-3. For Clark County, the Regional Transportation Advisory Committee (RTAC) provides technical advice to the RTC Board of Directors.

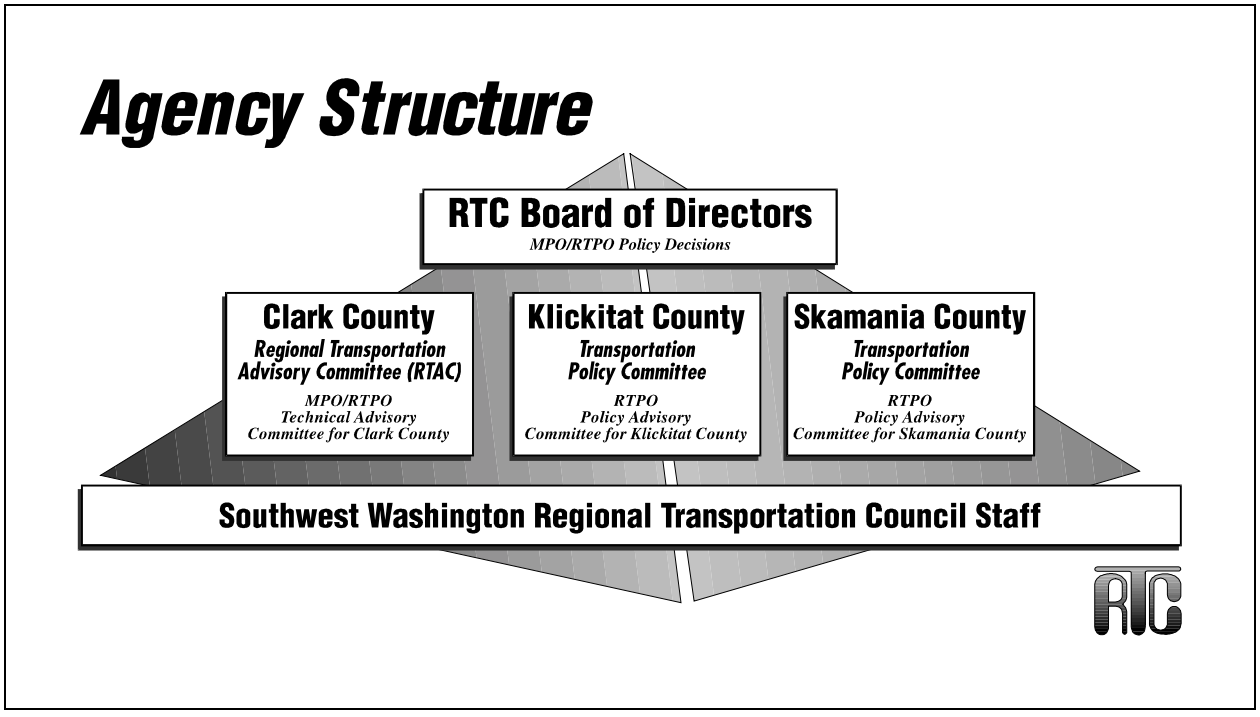


Figure 1-3: RTC Agency Structure

BI-STATE COORDINATION

Clark County, Washington forms part of the Portland-Vancouver metropolitan area; the remainder of the metropolitan area being in the state of Oregon. Planning for the metropolitan area is undertaken by two regional planning agencies, the Metropolitan Service District (Metro) in Portland, Oregon and the Southwest Washington Regional Transportation Council (RTC) in Clark County. Each agency carries out transportation planning activities for its respective geographic areas in accordance with the designated federal, state and local authority. However, since the two agencies represent the interests of a single metropolitan area it is necessary to have coordination between them to address interstate transportation issues and problems.

Coordination and cooperation in transportation planning activities between the two states are afforded by cross-representation on transportation committees and by coordination in development of the Metropolitan Transportation Plans, Transportation Improvement Programs and Unified Planning Work Programs (UPWPs) for the two respective areas. Membership of both the RTC Board of Directors and Regional Transportation Advisory Committee (RTAC) includes representatives from Oregon Department of Transportation (ODOT) and Metro. The Metro Joint Policy Advisory Committee on Transportation (JPACT) includes representatives from WSDOT, Clark County and the City of Vancouver and the Metro Transportation Policy Alternatives Committee (TPAC) includes representatives of WSDOT and RTC, with C-TRAN an associate member.

TRANSPORTATION FUTURES COMMITTEE AND THE REGIONAL TRANSPORTATION PLANNING PROCESS

0In February, 1995 Clark County voters defeated the financing proposal for the Clark County portion of the South/North Light Rail Transit (LRT) project. The defeat of the LRT vote led to an extensive discussion of the next steps for addressing bi-state transportation needs. Policy makers agreed that it was imperative to engage the community in a full debate on a wide range of transportation issues and needs facing Clark County. Hence, shortly after the vote, local elected officials recommended that a citizen-based discussion of future transportation issues be implemented. This led to the appointment of the Transportation Futures Committee. The Committee's purpose was to provide elected officials with a set of citizen findings that can be considered as transportation plans and programs are developed. Between September 28, 1995 and July 11, 1996, the Committee met twenty times. These included evening meetings and three all-day Saturday workshops. The findings of the Transportation Futures Committee are outlined in Chapter 5 (System Improvement and Strategy Plan).

LEVEL OF SERVICE STANDARDS

Level of service standards represent the minimum performance level desired for transportation facilities and services within the region. They are used as a gauge for evaluating the quality of service on the transportation system and can be described by travel times, freedom to maneuver, traffic interruptions, comfort, convenience, and safety. The Washington State Growth Management Act states that these standards should be regionally coordinated. The standards are used to identify deficient facilities and services in the transportation plan, and are also to be used

by local governments to judge whether transportation funding is adequate to support proposed land use developments. Level of service standards for Clark County, are further addressed in Chapter 3.

CLARK COUNTY METROPOLITAN TRANSPORTATION PLAN UPDATE: WORK PLAN

As a first step in preparation of the Clark County MTP a work plan to be followed in the development process was put together (see Figure 1-4). The work plan outlines major tasks to be covered in the development of the MTP. The MTP is designed as a benchmark Plan to meet federal MPO requirements for regional transportation planning in Clark County and incorporates elements required by the state regional transportation planning standards as a result of the 1990 GMA legislation and SHB 1928 legislation passed in 1994.

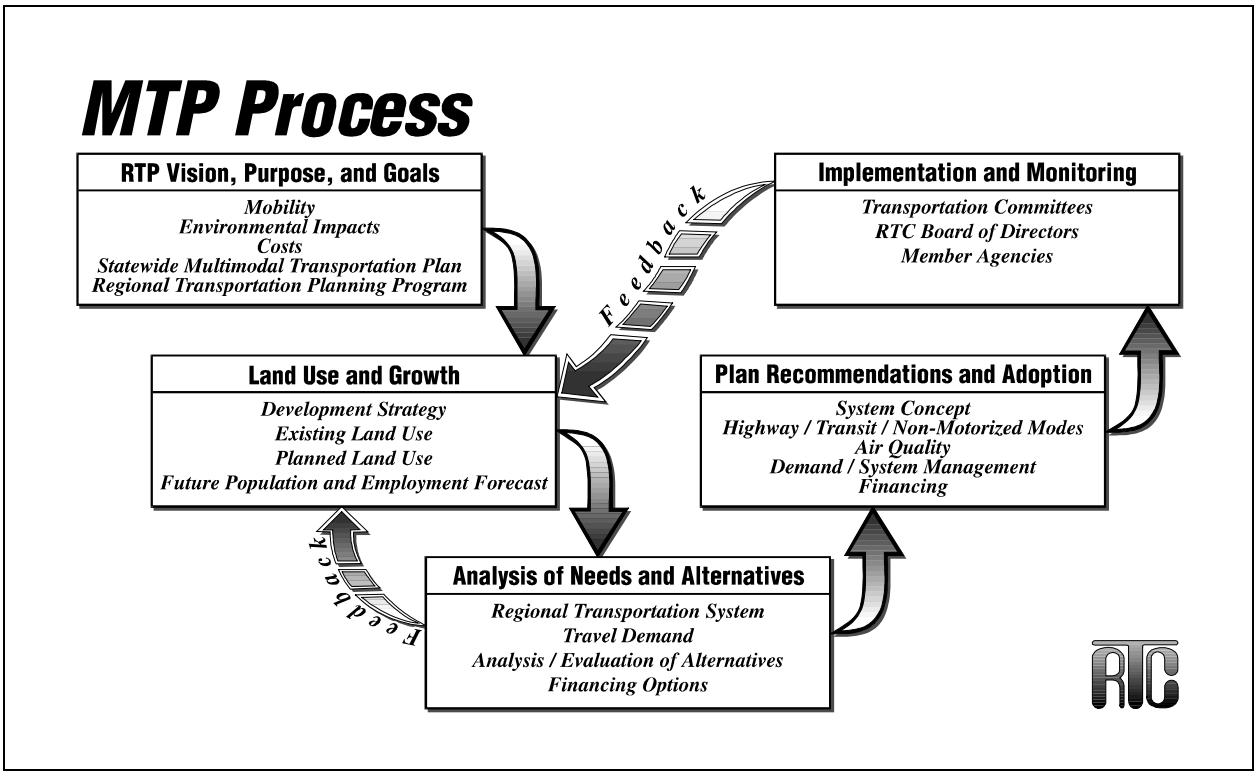


Figure 1-4: MTP Process

An outline of the chapters of the Plan is provided below. The MTP relies on regional transportation policies, known growth trends and base case regional travel forecasting results to present regional transportation needs.

OUTLINE OF MTP CHAPTERS

Chapter 1: **Introduction; MTP Vision, Purpose and Goals**. The MTP is introduced and its general goals, policies, statutory authority and purpose are described. The MTP process is outlined as well as regional transportation committee structure and intergovernmental cooperation and coordination in MTP development. The concept of level of service standards is introduced.

Chapter 2: **Regional Land Use and Growth**. Clark County's demographic data, development trends and regional development strategy are discussed. Existing and future land uses and development patterns are identified.

Chapter 3: **Identification of Regional Transportation Needs**. The regional transportation system is designated and defined. The characteristics and patterns of today's and future regional travel demand, today's transportation problem locations and future regional needs are described. Needs criteria such as acceptable levels of service, safety and accessibility are outlined. Transportation system alternatives are described and evaluated.

Chapter 4: **Financial Plan**. Revenue sources are identified and described and a plan for financing transportation system improvements is presented.

Chapter 5: **System Improvement and Strategy Plan**. Recommendations for development of the regional transportation system are made. Highways, transit systems and demand management alternatives are considered. The findings of the Transportation Futures Committee are also addressed.

Chapter 6: **Performance Monitoring**. Performance monitoring measures are described. Procedures to maintain the MTP's consistency with the state transportation plan, local transportation plans, major land use decisions and regional demographic projections are outlined.

Chapter 7: **Plan Development and Implementation**. Provisions for involvement of the public in development of the MTP are described. Provisions for implementation of regional transportation goals, policies and actions established by the MTP are described. The MTP review and amendment process is outlined, should changing policies, financial conditions or growth patterns warrant amendment of the Plan. The GMA-required biennial review process and need for triennial update to satisfy federal requirements is described.

CHAPTER 2

LAND USE, GROWTH AND TRANSPORTATION

LAND USE AND TRANSPORTATION

In developing a metropolitan transportation plan the fundamental relationship between transportation and land use should be recognized and the effect that land use and growth have on transportation considered.

The linkage between land use and transportation is a complex issue but on a simple level the linkage can be thought of as working in two ways:

1) The spatial distribution and type of land use activity influences both the demand for travel and travel characteristics.

   Different types of land use generate and attract differing traffic rates, for example, retail land uses will generate more trips than residential land uses.

2) Improving access by expanding the transportation system allows for the development of land that was formerly inaccessible.

The Land Use/Transportation cycle is illustrated in Figure 2-1.

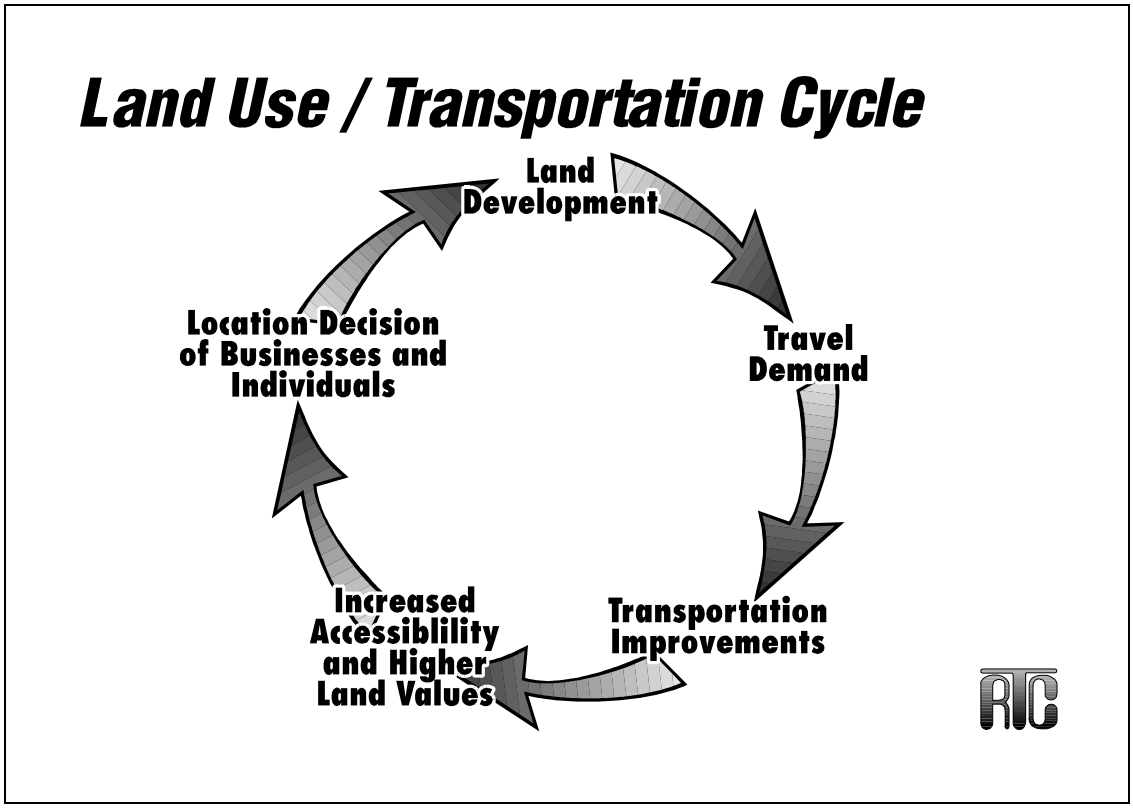


Figure 2-1: Land Use/Transportation Cycle

The Washington State 1990 Growth Management Act (GMA) recognized the importance of the linkage between land use and transportation and included in the Act were requirements that local comprehensive plans include a transportation element. Under the GMA, RTPOs were established to extend transportation planning. RTC was designated as RTPO for a three-county region which includes Clark, Skamania and Klickitat counties. The RTPOs were authorized to review the transportation elements of local comprehensive plans and certify that they comply with GMA requirements which included a requirements for consistency between the land use and transportation elements.

Land use and transportation are inter-linked; land use activities largely determine travel demand and desire. When different land uses are segregated, length of trips tends to increase. These longer trips are usually served more conveniently by the automobile, thus reducing the use of transportation alternatives, such as walking or transit, to meet mobility needs.

GROWTH AND DEVELOPMENT

Sustained economic development and growth within a region is desirable because of the economic benefits that increased employment and a larger tax base can bring. However, while growth can contribute to the health of a region's economy it can also have adverse impacts. Unmanaged, fast rates of growth can have a severe impact on the ability of a community to provide needed infrastructure and services. The costs of growth can include worsening levels of traffic congestion, decline in air quality, and overall degradation of the quality of life.

The need to maintain economic viability and, at the same time, quality of life is a challenge. Components which contribute to a desirable quality of life include job opportunities, affordable housing, a healthy environment with clean air and recreational opportunities. An efficient, safe transportation system contributes to the quality of life for residents of a region and can act as an attractor for economic development.

GROWTH IN CLARK COUNTY

Clark County has seen significant rates of growth in the last two decades. Between 1970 and 1998 the population of the county increased by 155% from 128,454 in 1970 to 328,000 in 1998 while the number of households increased by 202% from 42,816 in 1970 to129,500 in 1998 (see Figure 2-2). The increase in total employment (all full- and part-time jobs) in the county was 232% from 42,977 in 1970 to over 142,600 in 1998. Washington State's Office of Financial Management (OFM) estimates that Clark County's 1999 population is at 337,000. The rapid growth seen in the County in the last two decades has increased demands on the regional transportation system.

Development of a transportation policy plan to provide for mobility of people and goods has to consider how to plan for a transportation system which can support increases in travel demand caused by growth in population and employment. At the same time this system has to be affordable and minimize environmental impacts to maintain the quality of life. A safe, efficient transportation system can work to enhance economic development within a region and

development of the transportation system in conjunction with land use plans can contribute to positive growth management.

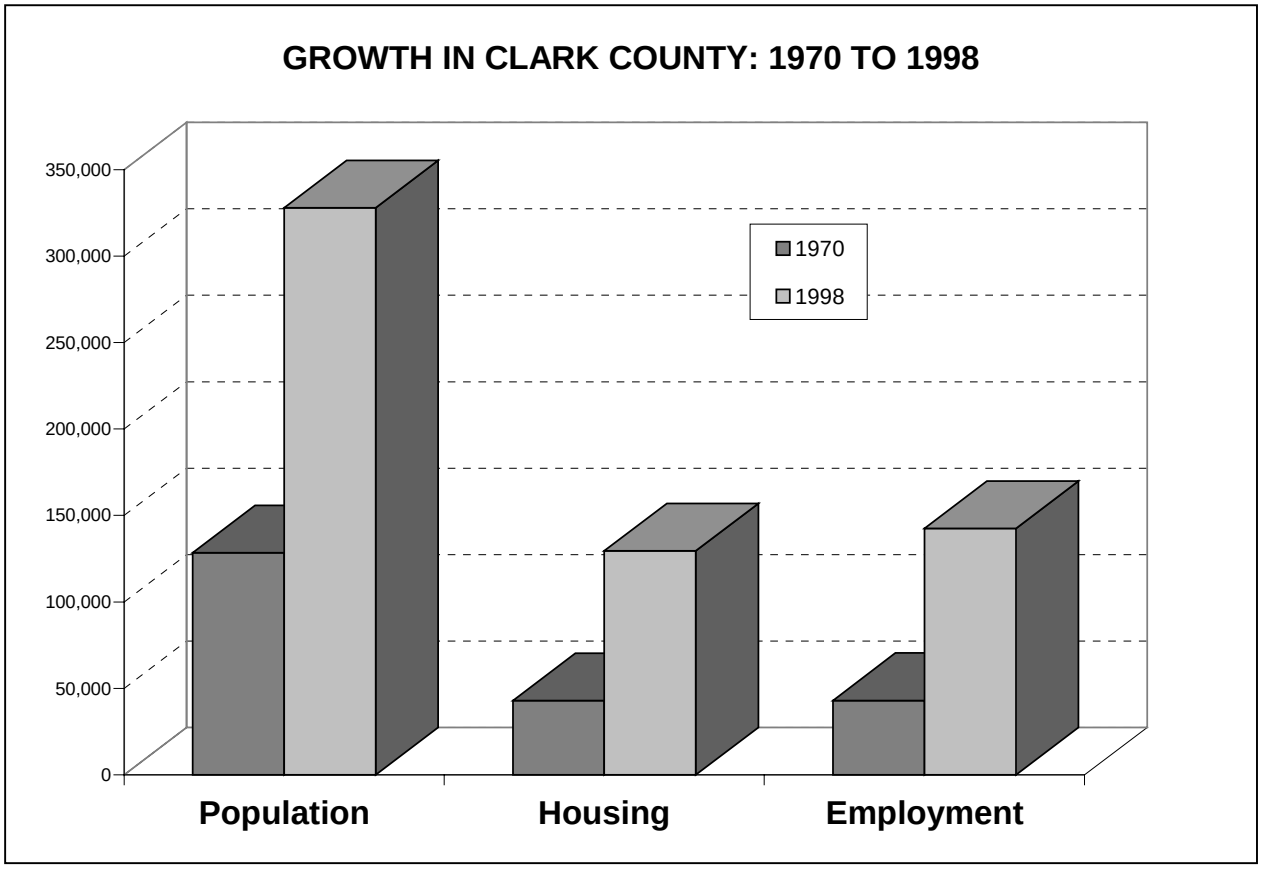


Figure 2-2: Growth in Clark County, 1970-1998

EXISTING LAND USES IN CLARK COUNTY

From the City of Vancouver, the urban hub of the county on the banks of the Columbia River, Clark County spreads through a rapidly growing suburban band, across agricultural lands and a network of smaller cities and towns to the slopes of the Cascade Mountain Range. The county is compact, measuring approximately 25 miles across in either direction and has an area of 405,760 acres (627 square miles).

Clark County's growth was stimulated by the development of "traditional" industries such as pulp and paper manufacturing, aluminum production and, during the wartime years, shipbuilding activities. In recent years the county has proved to be attractive to new manufacturing activities; the region is able to offer reasonably priced land for development in an attractive setting within a metropolitan area. Power is affordable and the region's location on the Pacific Rim, with easy access to Portland International Airport, has contributed to its growth and development. With the establishment of "new" high technology industries the region has been successful in diversifying its economic base. Major employers include Hewlett-Packard, SEH America, James River Corporation, Fred Meyer, Southwest Washington Medical Center, Vanalco, Frito-Lay,

Burlington Northern Railroad, Wafertech, Columbia Machine, AVX Vancouver Corporation, American Kotobuki Electronics, the Vancouver Clinic, Sharp Microelectronics, and Underwriters' Laboratory.

Clark County's location on the northern periphery of the Portland metropolitan area has contributed to the significant growth in residential developments and employment activities within the county in recent years. The nationwide trend toward development of the suburbs of metropolitan areas for residential developments, as well as employment activities, is apparent in this region. This development trend has implications for the provision of transportation infrastructure and services.

In Clark County the past two decades has seen rapid population growth with most of the growth occurring in the unincorporated areas. Between 1970 and 1999 the incorporated areas saw a growth in population of 209% (54,267 population in 1970 to 167,810 in 1999) while the growth in the unincorporated areas was 128% (from 74,187 population in 1970 to 191,320 in 1999). The proportion of the population living in the unincorporated areas increased from 58% in 1970 to a high of 74% in 1992 and is 50% in 1999 while the proportion living in the incorporated areas changed from 42% in 1970 to a low of 26% in 1992 and the proportion is 50% in 1999 (see Figure 2-3). Recent annexations by the City of Vancouver and the County's smaller cities have produced this trend. A large annexation of the Cascade Park area to Vancouver took place in 1997; Vancouver became the State's fourth largest city.

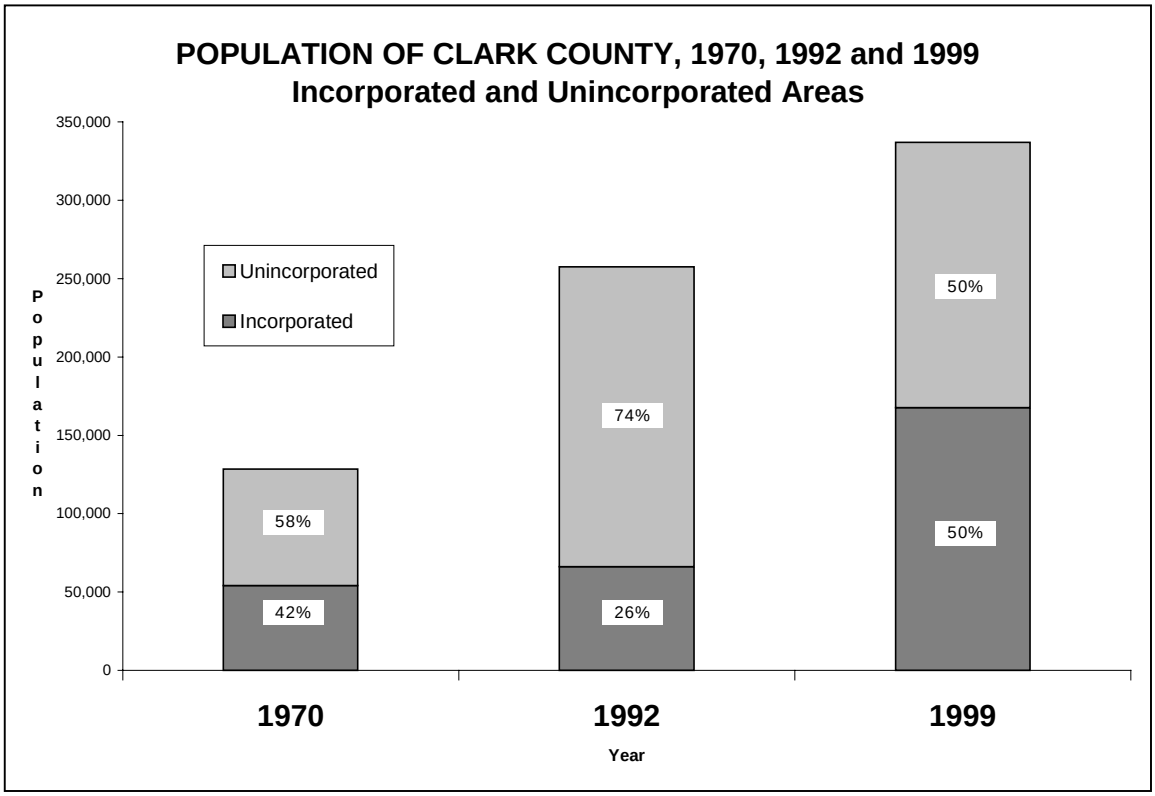


Figure 2-3: Incorporated and Unincorporated Population, 1970, 1992 and 1999

The provision of public facilities and services, including transportation, is a principal determinant of land use patterns. In relating land use patterns to the transportation system it is evident that contemporary land use patterns in Clark County have evolved largely as a result of dependence on the automobile for mobility of its residents. An examination of the existing combined land use maps of all the County's jurisdictions indicates that, within the urban area, residential and commercial activities have spread out along Highway 99, Fourth Plain, Mill Plain and SR-14. Late 1980's and 1990s growth in the Vancouver Mall area and Cascade Park/East County areas has resulted from the opening of SR-500 and I-205.

The City of Vancouver had seen relatively small growth in its population in the 1970's and 1980's. However, several recent annexations of land into the City have boosted its population to 65,360 in 1995, 67,450 in 1996 and 127,900 in 1997. In 1999, Vancouver's population is estimated at 135,100. Several new office buildings have opened in downtown Vancouver and great efforts are underway to revitalize the downtown area with an apartment complex under construction, plans for more new office buildings and an events center. However, the focus for retail activity has shifted to the Vancouver Mall area. The Vancouver Mall area was annexed to the City of Vancouver in 1992. Significant residential development has occurred in the Cascade Park and east County area. Making the development of the Vancouver Mall and Cascade Park/east county areas possible was the opening of new highway facilities, I-205 and SR-500, offering increased accessibility to the two areas.

The Vancouver Mall area was a relatively isolated and undeveloped tract of the unincorporated County when the 918,000 square foot shopping mall was constructed in two phases in 1977 and 1980. However, the improved access provided by the completion of the I-205 Glenn Jackson Bridge in 1982 and SR-500 in 1984, contributed to the area's rapid development in recent years. New commercial, retail, and residential developments have been attracted to the area, including offices, shops, restaurants, hotel units and apartments. The first phase (over 440,000 square feet) of Vancouver Plaza, a retail development on 45 acres to the south-west of Vancouver Mall, opened in fall 1988 and the Parkway Plaza office development to the west of the Mall has seen the completion of three large office buildings.

The Glenn-Jackson Bridge carrying I-205 across the Columbia opened in 1982. This relieved the bottleneck on I-5 and opened up access to the Portland region from east Clark County, including access to Portland International Airport. Rapid development of the area to the east of I-205 followed. A lot of the County's recent growth has focused on the 4-lane Mill Plain corridor, between 112th and 164th Avenues. A mix of residential development has taken place ranging from the adult community at Fairway Village to numerous large apartment developments and the Fisher's Landing development. Commercial development began in the area in 1978 when Fred Meyer opened a shopping center at Chkalov and Mill Plain. Others were quick to realize the area's commercial potential. Recent commercial developments have included Columbia Square, Fisher's Mercantile and Mountain View Village.

Provision of public facilities and services, including transportation, has shaped the development of land uses in Clark County up to the present and will continue to do so in the future.

LAND USE: PLANS FOR THE FUTURE

Comprehensive plans are the means by which local jurisdictions plan for their future growth and development; they can provide a process for anticipating and influencing the orderly and coordinated development of land. Within Washington State planning authority is delegated by the state to local governments in RCW 36.70A, 35.63 and 35A.63. Before passage of the Growth Management Act, comprehensive plans were required to have a land use element showing the general distribution and location of land for various uses, as well as a circulation element showing the street system and transportation routes. Under planning provisions contained in the 1990 Growth Management Act, now contained in RCW 36.70a and RCW 47.80, local comprehensive plans become the basis for defining and integrating land use, transportation, capital facilities, public utilities and environmental protection elements. Within the comprehensive planning process these elements have to be inter-related and there has to be consistency between them. The GMA legislation requires that land use decisions should not be made without consideration of transportation needs and impacts.

CLARK COUNTY JURISDICTIONS' COMPREHENSIVE LAND USE PLANS AND ZONING - THEIR USE IN THE REGIONAL TRANSPORTATION PLANNING PROCESS

As part of the Growth Management planning process, Clark County adopted a *Community Framework Plan* in April 1993 to serve as a guide for the County's long-term growth over a period of fifty plus years. The *Framework Plan* envisions a collection of distinct communities; a hierarchy of growth and activity centers. Land outside the population centers is to be dedicated to farms, forests, rural development and open space. The twenty-year comprehensive plan is to guide the growth of the County toward the future vision. Growth Management plans for the urban areas of Clark County were developed by Clark County and the cities and town of the region through a Partnership Planning process. Plans for the rural and natural resource lands were handled by Clark County. GMA plans for the County and urban areas were subject to review under the State Environmental Policy Act (SEPA). In September, 1994, the *Final Supplemental Environmental Impact Statement for the Comprehensive Growth Management Plans of Clark County, Battle Ground, Camas, La Center, Ridgefield, Vancouver, Washougal, Yacolt, Volume I and Public Comments, Volume II* was published by Clark County. The public was given many opportunities to get involved in the planning process. In December of 1994 the GMA plans for Clark County were adopted and in May of 1996 revisions were adopted. The twenty year plans include urban area boundaries.

Comprehensive land use plans are used in the regional transportation planning process as the basis for determining future land uses and identifying where future development is likely to occur. The visionary development strategy presented in the *Community Framework Plan* and GMA plans were used as the basis for determining the future demographic distribution throughout Clark County.

POPULATION AND EMPLOYMENT FORECAST

For the Portland-Vancouver metropolitan region as a whole, demographic forecasts are usually formulated through a cooperative planning process by the Metropolitan Service District (Metro), Portland, Oregon. The forecast region includes Clark County in Washington State, as well as Multnomah, Clackamas and Washington counties in Oregon. The population forecast used for this MTP are regional forecasts developed by Washington Office of Financial Management (OFM) who worked with Metro and local jurisdictions in determining the forecast. Clark County's 2020 population is forecast to exceed 473,000, the number of households is forecast to be over 192,000, and total employment is forecast to exceed 227,000. The 2020 forecasts represent a 44% increase in population from a 1998 population of 328,000, a 49% increase in housing over 1998 housing of 129,500, and a 60% increase in employment from 142,632 total full- and part-time jobs in Clark County in .

TRANSPORTATION ANALYSIS ZONES

In the regional transportation planning process the forecast growth in housing and employment for the year 2020 is converted into projections of future travel demand. For the purpose of analyzing future travel demand, a "Transportation Analysis Zone" (TAZ) System is used. The Portland metropolitan area is divided into TAZs; there are 459 zones in Clark County and 2 Clark County external zones. For each Clark County TAZ, the comprehensive plan land use designations and existing zoning are used as a basis for distributing 2020 forecasts for housing and employment. The demographic distributions are based on the County's assessor's data, building permit data and on vacant, buildable lands analysis.

DISTRIBUTION OF FUTURE GROWTH

As described above, the population of Clark County is forecast to grow by over 133,000 during the planning period from 1996 to 2020 and employment is set to grow by more than 73,000. GMA plans call for the focus of development within the Vancouver UGA to be in three growth centers: Downtown Vancouver, Vancouver Mall and the Salmon Creek/Washington State University vicinity. Denser patterns of development are to be encouraged along the main transportation corridors where transit service expansion is planned. In the I-5 corridor, densities and appropriate urban designs are to be encouraged to maximize the efficiencies of land use and allow for High Capacity Transit development. The smaller cities of Clark County are planning for denser development and expansion of their urban boundaries as they become focuses for growth outside of the core urban area of Vancouver.

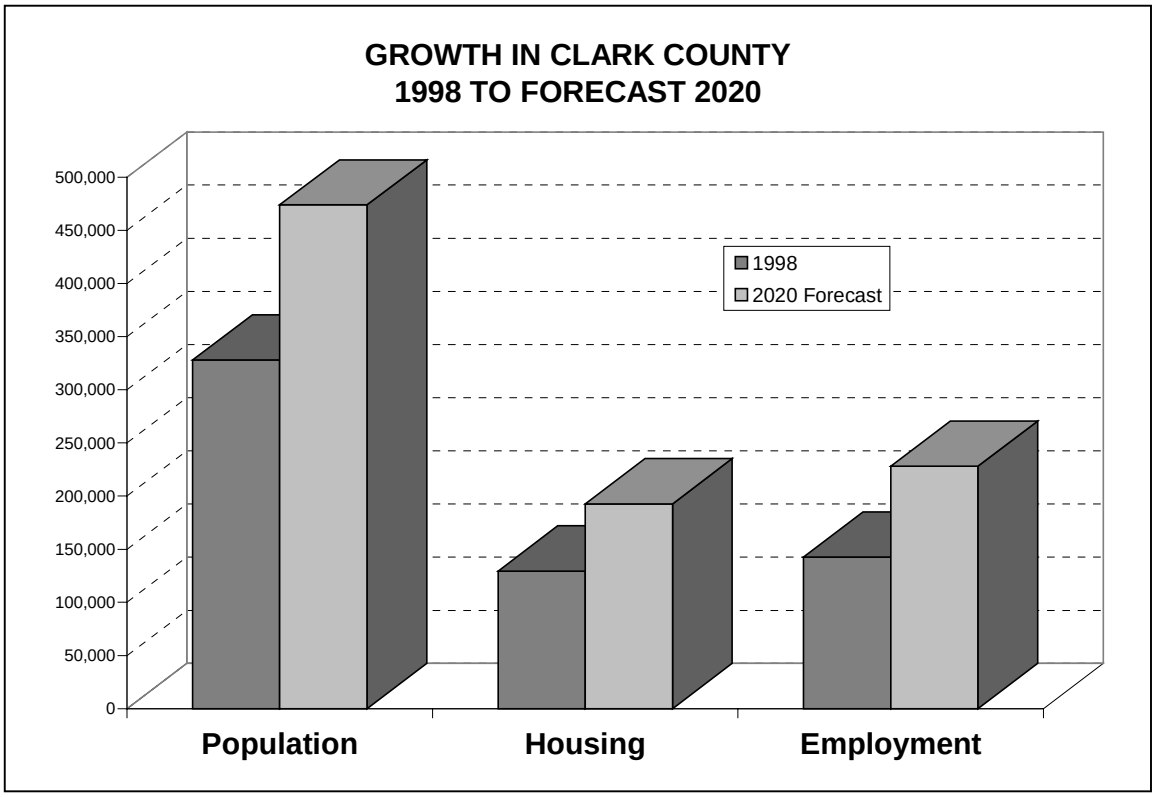


Figure 2-4: Growth in Clark County, 1998 to Forecast 2020

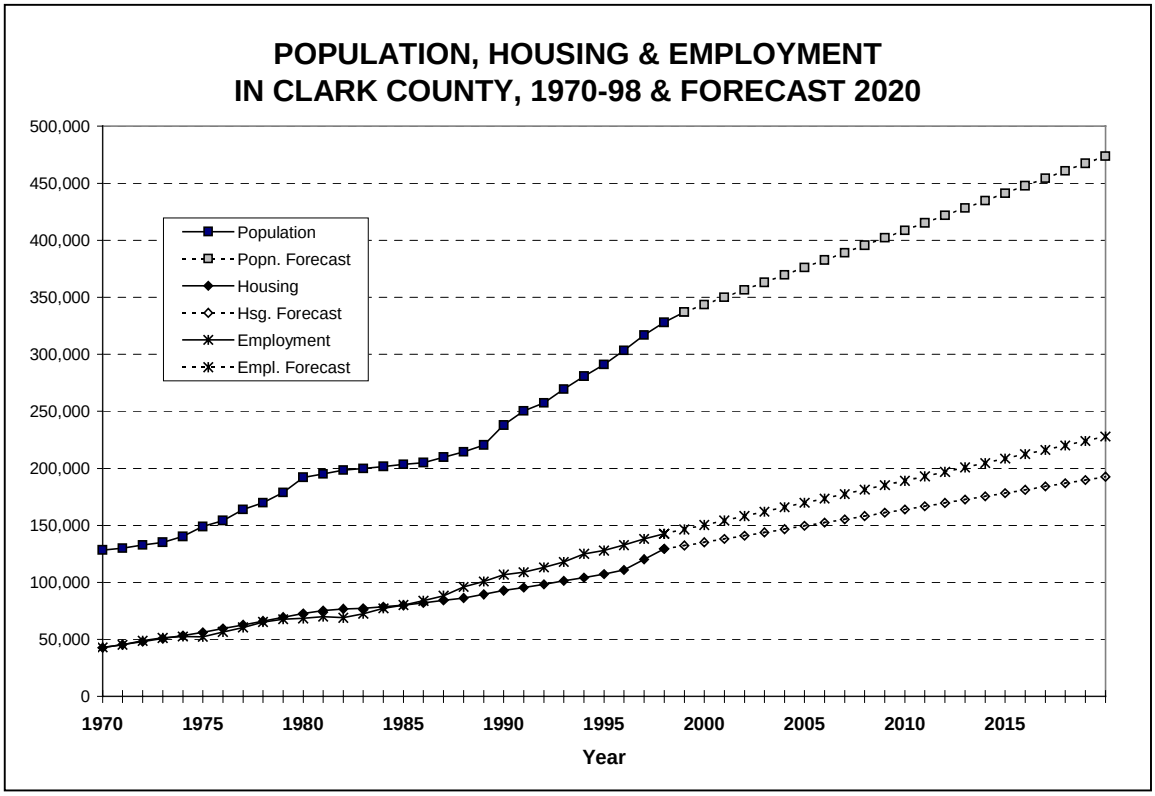


Figure 2-5: Population, Housing and Employment in Clark County, 1970-98 & Forecast 2020

DEMOGRAPHIC TRENDS

Not only does development and resulting land use patterns, together with growth in population and employment and its distribution, affect travel demand but current demographic trends are also tending to cause an increase in travel demand.

One of the most significant demographic trends in terms of land use and provision of transportation services is the trend toward smaller household size due to more single-person households and smaller family size. In 1980 the average number of persons per household in Clark County was 2.76, in 1990 it had fallen to 2.69 and, in future, is expected to decrease further. The 20-year forecast of population and housing for Clark County estimates 2.5 people per household in future. Forecast population growth, combined with these demographic trends, results in significant development pressures for more housing and expansion of land devoted to residential uses. Smaller household size can lead to increased travel demand and the expansion of residential land uses necessitates improvements to the transportation system to access new and developing residential areas.

Another demographic trend which affects travel demand is the increase seen in female participation in the work force with a resulting increase in two-worker households. Typically, the two workers in the household each use an auto to get to work, use the auto for work purposes while at work, use it to run errands at lunch time and before or after work and, if they have a family, to take their children to daycare facilities. All result in people's increased reliance on the automobile which they see as their most convenient transportation mode.

Employment patterns have also been changing, with a relative decline seen in the traditional, blue-collar, industrial jobs and an increase in service sector employment. Clark County has seen this change in employment structure and has seen growth in "high-tech" employment and a large increase in the retail sector in recent years. The number of jobs is increasing in suburban areas such as Clark County and employment is dispersing throughout the region. The "new" suburban places of employment have also tended to add to travel demand because of their dispersal, because they have been designed for auto-commuters and are not so easily served by transit service.

Travel demand has also grown as the number of registered passenger cars in Clark County has increased dramatically over the last three decades (see Figures 2-6 and 2-7). 1960 to 1996 saw a 224% increase in population in Clark County but at the same time there was a 343% increase in registered passenger cars. Table 2-1 shows the 1970 to 1996 increase in registered passenger cars and registered vehicles (includes all trucks, commercial and recreational vehicles plus passenger cars) in Clark County. The number of passenger cars per household has increased at the same time as household size has decreased resulting in even more autos on Clark County highways.

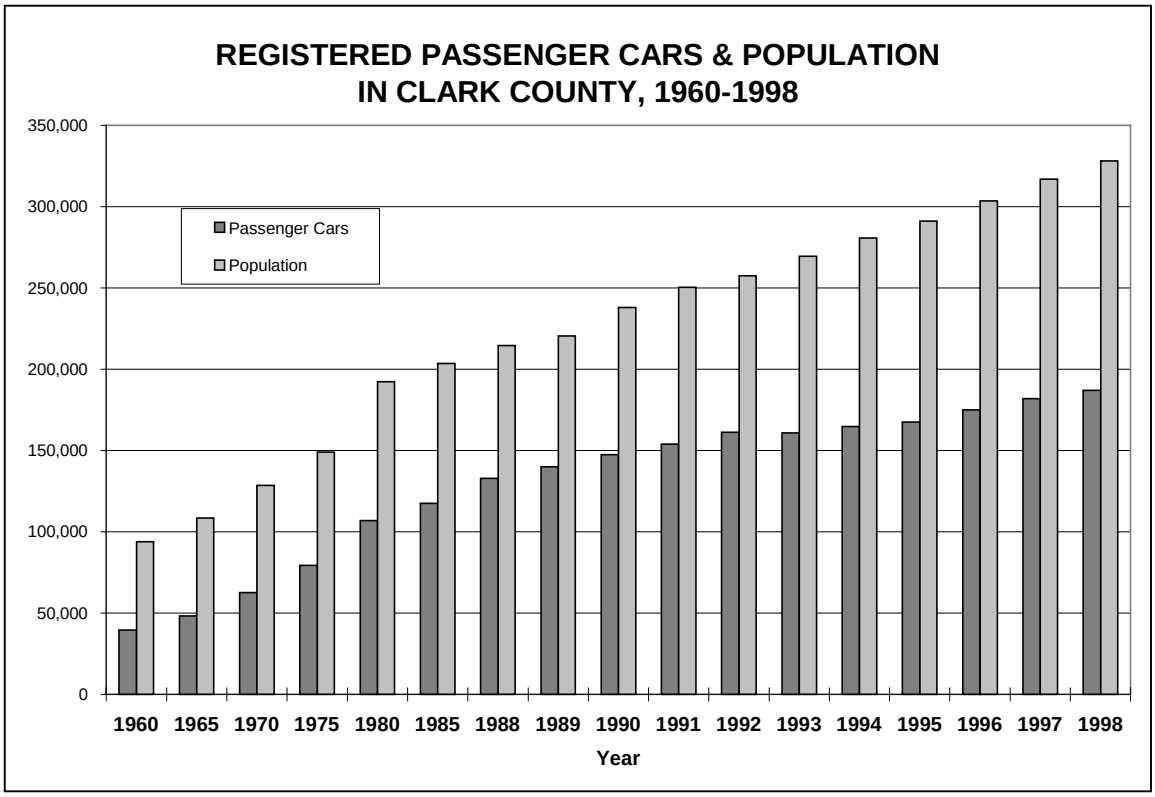


Figure 2-6: Registered Passenger Cars & Population in Clark County, 1960-1998

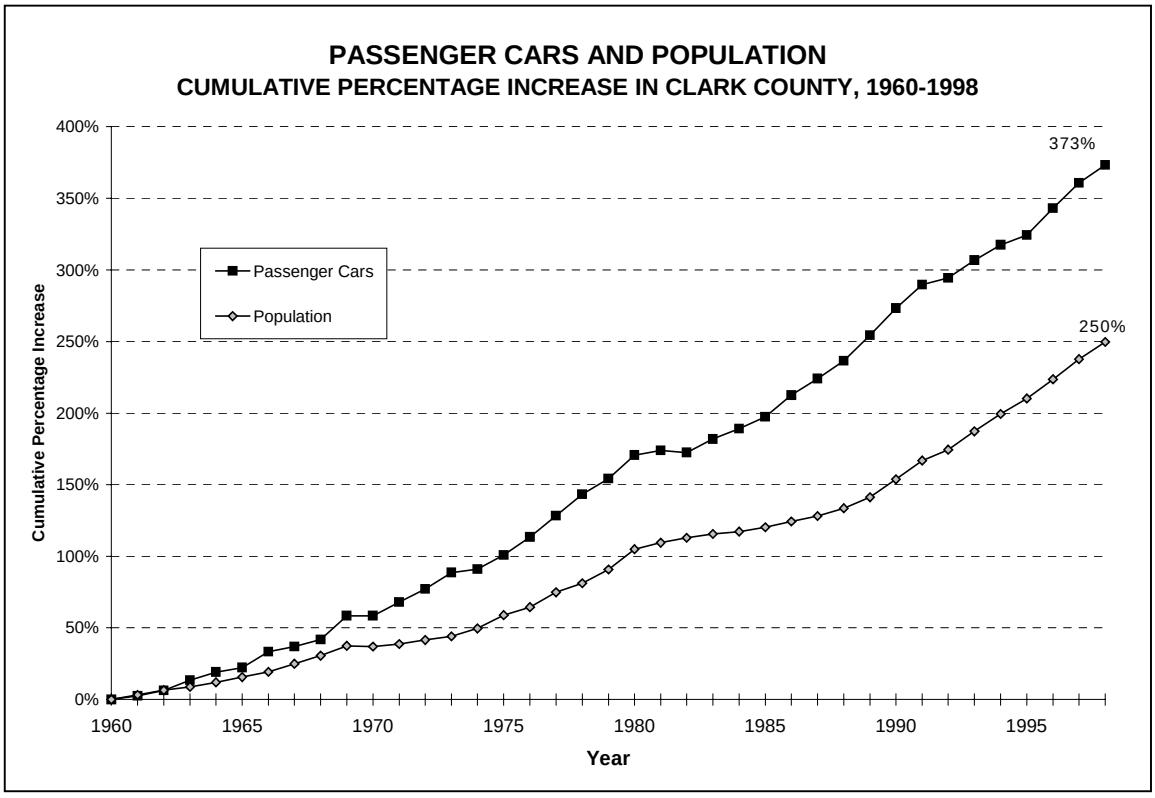


Figure 2-7: Passenger Cars and Population, Cumulative Increase in Clark County, 1960-1998

CLARK COUNTY GROWTH TRENDS										
Year	Popn.	Housing Units	House-holds	Persons Per House-hold	Registered Passenger Cars	Registered Passenger Cars Per Head of Popn.	Registered Passenger Cars Per Household	Registered Vehicles	Registered Vehicles Per Head of Popn.	Registered Vehicles Per Household
1970	128,454	42,816	41,064	3.10	62,586	0.49	1.52	95,788	0.75	2.33
1980	192,227	72,806	68,750	2.76	106,889	0.56	1.55	171,474	0.89	2.49
1990	238,053	92,849	88,440	2.69	147,401	0.62	1.67	238,629	1.00	2.70
1998	328,000	129,500	123,025*	2.67	186,926	0.57	1.52	302,754	092	2.46

Source: U.S. Bureau of the Census and Washington State Department of Licensing
* = Estimate

Table 2-1: Clark County Demographic Data

CLARK COUNTY 1998 TO 2020 GROWTH FORECASTS: MTP			
	1998	MTP 2020	% Change 1998 to 2020
Population	328,000	473,898	44%
Housing	129,500	192,716	49%
Employment	142,500	227,910	60%

Table 2-2: Summary of Clark County Growth Forecasts

Clark County has seen a large growth in its population over the past two decades and the growth trend is likely to continue. At the same time, there has been a larger increase in the number of vehicles registered in the County, adding to the demands put on the County's transportation system. Development of land, growth in population and travel demand requires a combination of expansion of public facilities and service provision and a revision to land use plans to ensure mixed use developments and better balance of jobs and housing throughout the region. The comprehensive plans for the Clark County region, developed under the Growth Management Act (GMA), intends to reverse the trend of increased dependence on the automobile. Land uses and transportation have been linked in the planning process and their inter-relationships considered in developing a vision for future growth and future growth patterns. In assessing future transportation needs for the Clark County region the comprehensive plans of its jurisdictions are used as a basis for analysis of the transportation system. The GMA requires that transportation system improvements be put in place 'concurrent' with land development. This is essential if growth is to occur in an orderly manner.

CHAPTER 3

IDENTIFICATION OF REGIONAL TRANSPORTATION NEEDS

INVENTORY OF THE EXISTING REGIONAL TRANSPORTATION SYSTEM

As an introduction to planning for the future development of a regional transportation system, an inventory of the existing system is provided. Also, a brief description of the context for regional transportation planning, with regard to meeting federal requirements and designation of federal transportation area boundaries is described.

FEDERAL TRANSPORTATION BOUNDARIES

When the Intermodal Surface Transportation Efficiency Act (ISTEA) was passed in 1991, the Act required Metropolitan Planning Organizations (MPOs), such as RTC, to carry out review of several elements of the regional transportation planning program. First, the Act called for review and revision of the federal transportation **Urban Area Boundary** (UAB); a boundary delineating areas which are urban in nature from those that are largely rural in nature. The federal transportation Urban Area Boundary is not to be confused with the Urban Growth Areas being established under the Washington State Growth Management Act (GMA), as described in Chapter 2. The UAB should cover, at a minimum, the area designated by the 1990 Census as "urbanized" by meeting certain population and density criteria. Within Clark County, the Vancouver urban area has a population of over 50,000 and is therefore defined as an urbanized area by the U.S. Census and Camas/Washougal are defined as an urban area or urban place because they have populations of over 5,000 but are not within the main Vancouver urbanized area. Therefore, for federal transportation purposes there is a Vancouver federal transportation Urban Area Boundary and an adjoining Camas/Washougal Urban Area Boundary. (Refer to Figure 3-1; *Transportation Boundaries*).

ISTEA also called for MPO's to establish a **Metropolitan Area Boundary** which marks the area to be covered by MPO regional transportation planning activities and which, at a minimum, has to include the urban area, the contiguous area expected to be urbanized within the next twenty years and in air quality non-attainment areas, such as the Vancouver area, must include the area enclosed by the **non-attainment area boundary** (i.e. the Vancouver Air Quality Maintenance Area). The Vancouver area's classification as a moderate non-attainment area for carbon monoxide and a marginal non-attainment area for ozone resulted in development and submission to the Environmental Protection Agency (EPA) of Air Quality Maintenance Plans for both carbon monoxide and ozone. This has implications for regional transportation planning as the region strives to attain and then maintain national ambient air quality standards. The entire county is enclosed by the Metropolitan Area Boundary established for the Clark County region. (Refer to Figure 3-1; *Transportation Boundaries*).

With a population of over 200,000 the Portland-Vancouver metropolitan area was designated as a **Transportation Management Area** (TMA) by the U.S. Secretary of Transportation. Within TMAs, the MPO has to develop a congestion management system. The RTC Board adopted the Transportation Management Systems at their May 2, 1995 meeting (RTC Board Resolution 05-95-14). The MPO has authority to select, in consultation with the state, projects to receive federal funds (see Chapter 4 for further details).

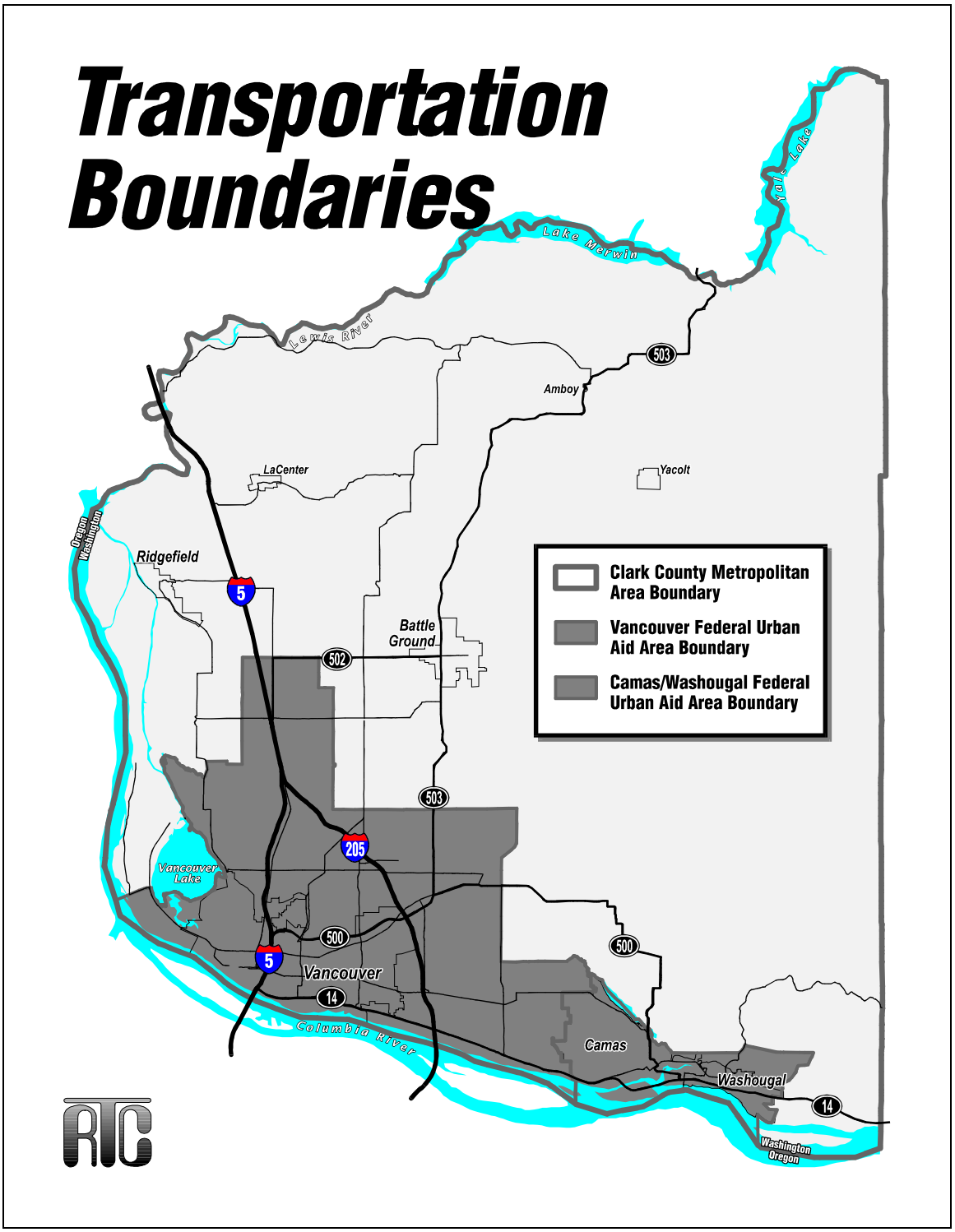
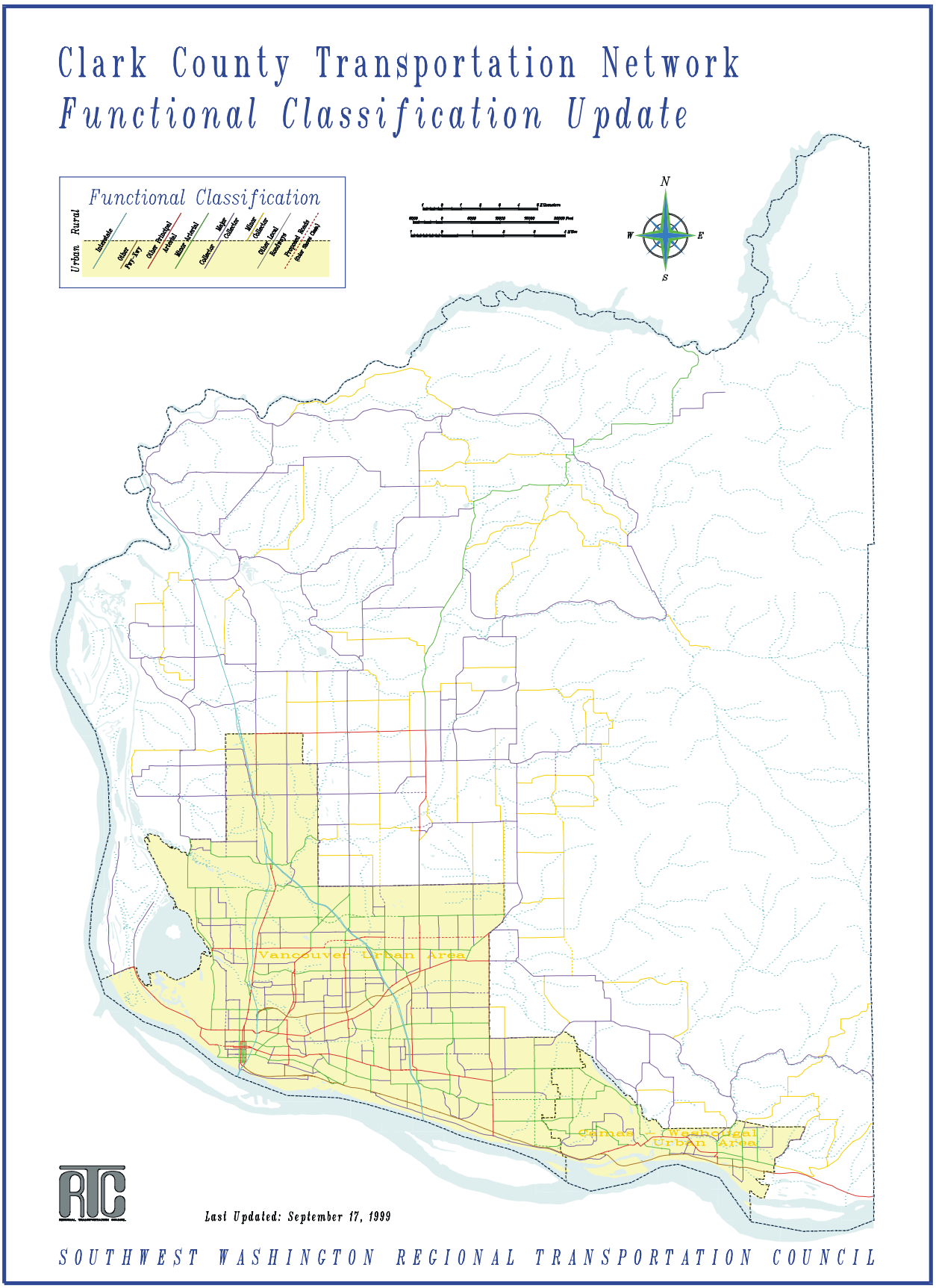


Figure 3-1: Transportation Boundaries

Figure 3-2: Clark County Federal Functional Classification Map



Functional Classification of the Regional Highway System

Arterials are categorized into a functional classification system; the classifying of highways, roads and streets into groups having similar characteristics for providing mobility and/or land access. Interstate freeways, classified as divided principal arterials, are designed to provide for the highest degree of mobility of large volumes of long-distance traffic, they are not designed to provide for access to land uses. Collector facilities generally provide equal emphasis upon mobility and land use accessibility. Local facilities emphasize access to land uses.

In 1993, to meet the requirements of ISTEA, the Federal Functional Classification system for Clark County roads was reviewed. This review led to a revision of the classification system within some jurisdictions and the result was a county-wide uniform classification system (see Figure 3-2; *Clark County Transportation Network, Functional Classification Update*). In May, 1993, RTC was informed by WSDOT that the revised functional classification system had been approved by the Federal Highways Administration. Since the 1993 approval, minor changes have been made to the federal functional classification system. The changes include re-designation of Burton Road, from Andresen Road to NE 162nd Avenue from a collector to minor arterial (MTP, 1996), and re-affirmation of NE 20th Avenue/NE 15th Avenue from Highway 99 to NE 179th Street as a minor arterial. Clark County is now in the process of reviewing classification of certain streets in their system and will be re-classifying following approval of Clark County Arterial Atlas changes by the Board of County Commissioners. The City of Vancouver has requested street re-classifications for: Simpson Avenue (Mill Plain to Fourth Plain) from minor arterial to local and NE 97th Avenue (between Mill Plain and NE 18th Street) from collector to minor arterial.

As a pre-requisite for review of the functional classification system, the Urban Area Boundary had to be defined (refer to Figure 3-1; *Transportation Boundaries*). Facilities classified as collector or above in urban areas are eligible for federal funding while in the rural area, those facilities classified as major collector and above are eligible. In rural areas, minor collectors are not eligible for federal funding. A description of the urban functional classification categories follows:

PRINCIPAL ARTERIALS

Principal arterials permit traffic flow through the urban area and between major elements of the urban area. They are of great importance in the regional transportation system as they interconnect major traffic generators, such as the central business district and regional shopping centers, to other major activity centers and carry a high proportion of the total urban area travel on a minimum of roadway mileage. They also carry traffic between communities. Frequently principal arterials carry important intra-urban as well as intercity bus routes.

Many principal arterials are fully or partially controlled access facilities emphasizing the through movement of traffic. Within the category are (1) interstates (2) other freeways and expressways and (3) other principal arterials.

Spacing of principal arterials may vary from less than one mile in highly developed central business areas to five miles or more in the sparsely developed urban fringes.

MINOR ARTERIALS

Minor arterials collect and distribute traffic from principal arterials to lesser classified streets, or allow for traffic to directly access their destinations. They serve secondary traffic generators such as community business centers, neighborhood shopping centers, multiple residence areas, and traffic from neighborhood to neighborhood within a community. Access to land use activities is generally permitted. Such facilities are usually spaced under two miles apart and in core areas can be spaced at 1/8 to 1/2 mile apart.

COLLECTORS

Collectors provide for land access and traffic circulation within residential neighborhoods and commercial and industrial areas. They distribute traffic movements from such areas to the arterial system. Collectors do not handle long through trips and are not continuous for any great length.

LOCAL STREETS

Local streets provide direct access to abutting land and access to the higher classification facilities. They offer the lowest level of mobility and usually contain no bus routes. They are not intended to carry through traffic but make up a large percentage of the total street mileage.

Rural roads consist of those facilities that are outside of urban areas. They too are categorized into functional classifications:

RURAL PRINCIPAL ARTERIALS

Rural principal arterials are sub-divided into two sets (1) interstate facilities and (2) other principal arterials. They consist of a connected rural network of continuous routes and provide an integrated network without stub connections.

RURAL MINOR ARTERIALS

In conjunction with the principal arterials, the rural minor arterials form a rural network which link cities and larger towns together with other major traffic generators. The principal arterials and rural minor arterials are spaced at such intervals that all developed areas of the state are within a reasonable distance of an arterial highway. Minor arterials should be expected to provide for relatively high overall travel speeds with minimum interference to through movement.

The other rural road classifications are:

Rural Major Collector Roads (are eligible for federal funding)

Rural Minor Collector Roads (are not eligible for federal funding) and

Rural Local Roads

NATIONAL HIGHWAY SYSTEM (NHS)

ISTEA also required that roads be designated as National Highway System (NHS) facilities. Congress approved the NHS system with passage of the National Highway System Designation Act of 1995 (NHS Act). In Clark County the following roads have been designated as NHS facilities:

Table 3-1: Designated NHS Facilities; Clark County

DESIGNATED NHS FACILITIES - Clark County	
Facility	**Extent**
I-5	Oregon State Line to Clark County line (north)
I-205	Oregon State Line to I-5 Interchange
SR-14	I-5 to Clark County line (east)
SR-500	I-5 to SR-503 intersection
SR-501	I-5 to Port of Vancouver access
SR-502	I-5 to SR-503 intersection
SR-503	SR-500 intersection to SR-502 intersection

Table 3-2: Federal Functional Classification Mileage

FEDERAL FUNCTIONAL CLASSIFICATION OF CLARK COUNTY ROADS Mileage of Classified and Local Roads					
Facility Type	**Vancouver Urban Area**	**Camas Urban Area**	**Rural Remainder of County**	**Total Clark County**	**% of Total**
Interstates	22.1	0.0	9.2	31.4	1.2%
Expressways & Principals	78.2	11.5	14.2	103.9	4.0%
Minor Arterials	94.5	24.1	19.7	138.3	5.3%
Urban Collectors and Rural Major Collectors	133.2	16.0	204.4	353.5	13.6%
Rural Minor Collectors	0.0	0.0	143.1	143.1	5.5%
Local Roads	625.8	71.3	1,136.3	1,833.4	70.4%
Total	953.8	123.0	1,526.9	2,603.6	100.0%

There is a state-wide limitation on the percentage of roads which can be functionally classified as Principal Arterial per federal guidelines. As a result, Clark County was unable to classify the facilities listed in Table 3-3 according to their plans for design standards for the facilities. The County intends that the listed facilities be developed to the GMA classification system design standards and, at the earliest opportunity, should be re-classified under the federal functional classification system so that both GMA and federal systems match. As the mileage of local roads increases, then the mileage of principal arterials or minor arterials could potentially be increased.

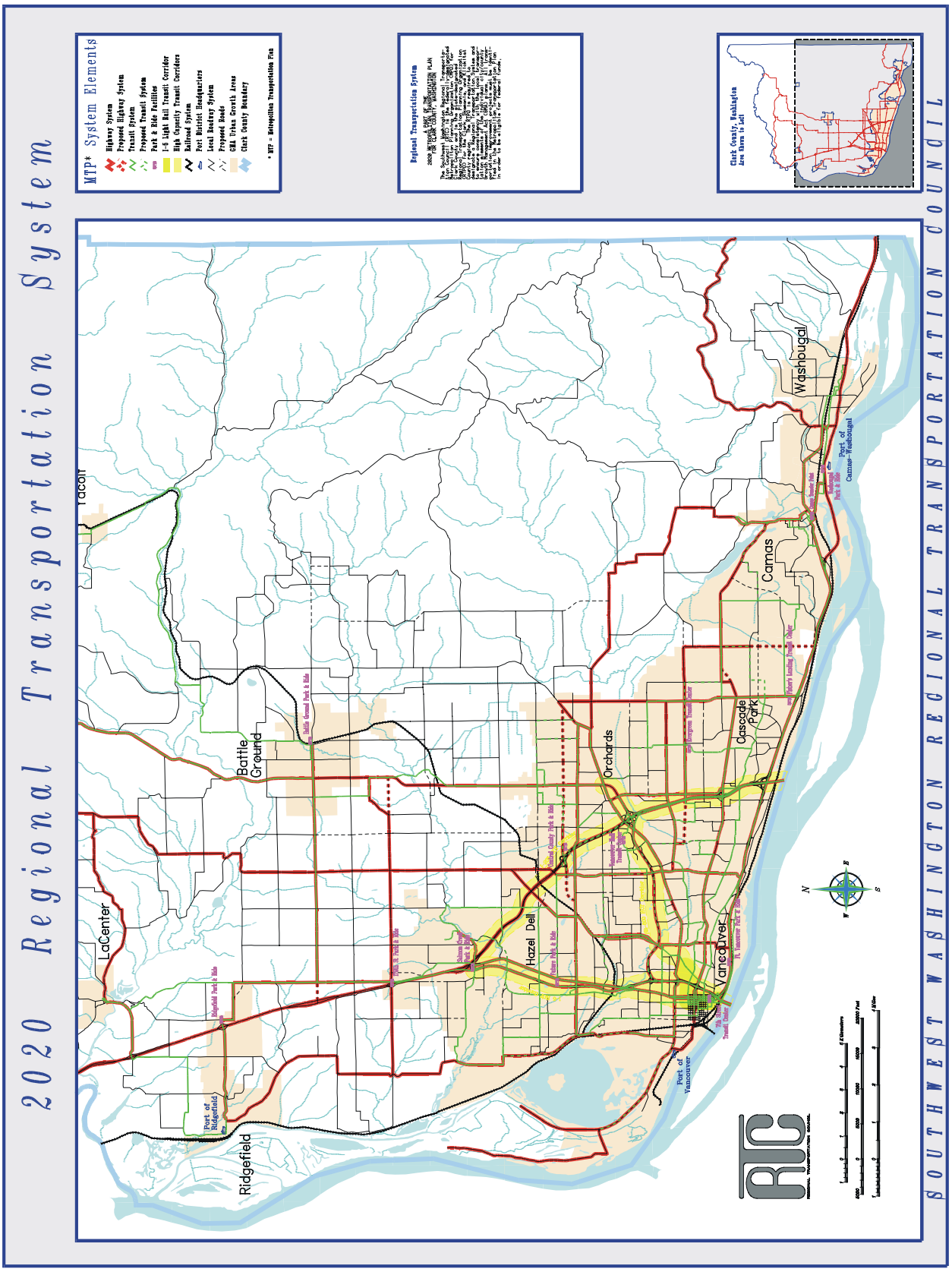
HIGHWAYS OF STATEWIDE SIGNIFICANCE (HSS)

The 1999 state legislature adopted the Highways of statewide significance, fulfilling a requirements of House Bill 1487 passed in 1998. In Clark County highway facilities defined as of Statewide Significance are I-5, I-205 and SR-14.

Table 3-3: Clark County Functional Re-classification

Clark County Facilities for Functional Re-classification			
Facility	**Extent**	**Federal Functional Classification**	**GMA Functional Classification**
St. John's	NE 78th St to NE 72nd Ave	Minor Arterial	Principal
Andresen/NE 72nd Ave	NE 78th St to NE 119th St	Minor Arterial	Principal
NE 18th St (part proposed, part existing)	Andresen to NE 162nd Ave	Minor Arterial	Principal
SE/NE 192nd Ave (part proposed, part existing)	SR-14 to NE 18th St	Minor Arterial	Principal
Mill Plain (part proposed, part existing)	NE 164th Ave to SE 1st St (180th Ave vicinity)	Minor Arterial	Principal
Mill Plain	180th Ave vicinity to Camas City Limits	Minor Arterial	Principal
179th St	NW 11th to NE 29th Ave	Collector	Principal
Lakeshore/36th Ave	Bliss Rd to NE 78th St	Minor Arterial	Principal
Ward Rd	Fourth Plain to 162nd Ave	Minor Arterial	Principal
Andresen Rd	NE 18th St to Mill Plain	Minor Arterial	Principal

Figure 3-3: 2015 Regional Transportation System



Designation Of The RTP Regional Transportation System

Consistent with the state's Regional Transportation Planning Program Planning Standards, the designated MTP regional transportation system (see Figure 3-3) includes:

1. All state transportation facilities and services (including highways, state-owned park-and-ride lots etc.)

2. All local freeways, expressways, and principal arterials (the definition of principal arterials can be the same as used for federal classification or be regionally determined).

3. All high-capacity transit systems (any express-oriented transit service operating on an exclusive right-of-way including high occupancy vehicle (HOV) lanes).

4. All other transportation facilities and services, including airports, transit services and facilities, roadways, rail facilities, marine transportation facilities etc. that the RTPO considers necessary to complete the regional plan.

5. Any transportation facility or service that regional need or impact places in the plan, as determined by the RTPO.

It is the designated regional transportation system which is the focus for transportation planning in the MTP.

A detailed description of the designated MTP Regional Transportation System follows:

1. **All state transportation facilities and services** (including state highways, state owned park and ride lots etc.)

In Clark County this category includes Interstate facilities I-5 and I-205.

Clark County has a 20.78 mile section of **I-5**, the major interstate freeway serving the west coast of the U.S.A.. I-5 provides for north-south travel and is used for interstate travel from southern California, through the state of Oregon northward through Washington State to the Canadian border. I-5 crosses the Columbia River from Oregon to Washington over the Interstate Bridge. I-5 has three lanes in each direction from the Interstate Bridge north to the Highway 99 off-ramp. There are currently two travel lanes in each direction from I-5/Highway 99 to the point at which I-205 joins I-5. North of the I-5/I-205 interchange there are again three travel lanes in each direction.

A 10.07 mile stretch of **I-205** traverses Clark County until it joins I-5 just north of N.E. 134th Street. I-205 was constructed as an alternative route to I-5, as a by-pass facility through the Portland/Vancouver metropolitan area. I-205 crosses the Columbia River over the Glenn Jackson Bridge which was opened in 1982. The Glenn Jackson Bridge has four travel lanes in each direction. North of the bridge the facility has three lanes in each direction to a point just north of the interchange with SR-500. I-205 continues as a two lane in each direction facility until it joins I-5.

State routes in Clark County include SR-14., SR-500, SR-501, SR-502 and SR-503. Following the adoption of the Road Jurisdiction Committee's criteria guiding the designation, addition or deletion of state routes it was recommended and legislated that SR-140 be returned to local jurisdictions.

SR-14 provides the main east-west access from south-west Washington state to south-east Washington State along the north bank of the Columbia River. The facility extends 21.77 miles through Clark County to the Skamania County line with two lanes in each direction up to mile post 12 and one lane in each direction thereafter.

SR-500 is a 20.37 mile facility entirely within Clark County and allows for east-west cross-county travel. From the interchange with I-5 the facility has two-lanes in each direction until it reaches Ward Road. The facility then becomes a one-lane in each direction facility and traverses rural Clark County until the Camas urban area is reached. SR-500 meets SR-14 in Camas. The facility carries traffic to and from the Clark County regional shopping mall, Vancouver Mall. The segment of SR-500 between I-5 and I-205 was opened as a limited access facility in 1984.

SR-501 is comprised of two unconnected segments. The south segment extends, as a four-lane facility, from the interchange with I-5 westward along Fourth Plain. This segment of SR-501 carries traffic to and from the Port of Vancouver. The facility reduces to two lanes and branches into two in the Vancouver Lake lowlands area with both branches terminating in the lowlands. The northern segment extends as a two-lane facility from I-5 westward to the City of Ridgefield where it terminates. Originally it was intended that the two segments be joined to complete a circumferential route around the westside of the Vancouver urban area and to carry traffic to and from the lowlands industrial area. However, the facility was never completed.

SR-502 extends from the I-5/N.E. 179th Street interchange northward to N.E. 219th Street where it turns eastbound toward Battle Ground.

SR-503 extends northward from its intersection with SR-500 to the Cowlitz County line. The route has four lanes to N.E. 144th Street at which point it reduces to two lanes.

Table 3-4: State Route Mileage in Clark County

STATE ROUTE MILEAGE IN CLARK COUNTY					
Facility	**Beginning Mile Post**	**Begins at: (Description)**	**Ending Mile Post**	**Ends at: (Description)**	**Route Mileage**
I-5	0	Oregon State Line on Interstate Bridge	20.78	Cowlitz Co. Line	20.78
I-205	0	Oregon State Line on Glenn Jackson Bridge	10.07	Interchange with SR-5	10.07
SR-14	0	Interchange with SR-5, Vancouver	21.77	Skamania Co. Line	21.77
SR-500	0	Interchange with SR-5	20.37	Intersection with SR-14, Camas	20.37
SR-501 S. Section	0	Interchange with SR-5	12.72	Terminus of south segment	19.88
SR-501 N. Section	16.91	City of Ridgefield	19.88	Interchange with I-5/ N.E. 269th St.	
SR-502	0	Intersection with SR-5, at N.E. 179th St.	7.56	Intersection with SR-503	7.56
SR-503	0	Intersection with SR-500	19.73	Cowlitz Co. line	19.73

2. **All local freeways, expressways, and principal arterials**

Local expressways and principal arterials are also designated as part of the regional transportation system. Principal arterials, such as Mill Plain, Fourth Plain, N.E. 78th Street, N.E. 112th Avenue, SE/NE164th/162nd Avenue. and segments of St. John's and Andresen are included. Future planned arterials on the regional system are marked on Figure 3-3 by a dashed red line. Future planned facilities include the Padden Expressway, the Mill Plain Extension, 192nd Avenue (from SR-14 north) and NE 18th Street extension west from NE 102nd Avenue to NE 87th Avenue.

3. **All high-capacity transit systems** (any express-oriented transit service operating on an exclusive right-of-way including high occupancy vehicle (HOV) lanes).

The I-5 (from State line to the vicinity of NE 134th Street), I-205 (from state line to vicinity of NE 134th Street) and SR-500 (from I-5 to the Orchards area) corridors are designated as High Capacity Transit (HCT) corridors. Planning for Light Rail Transit (LRT) in the I-5 corridor, terminating in the vicinity of Clark College, is underway.

4. **All other transportation facilities and services considered necessary to complete the regional transportation plan**. These include transit services and facilities, roadways, rail facilities, airports, marine transportation facilities etc.

Clark County is served by the C-TRAN transit system which operates a **FIXED ROUTE BUS SYSTEM** on urban and rural routes in Clark County and express bus service for commuters to Portland, Oregon. Figure 3-3 marks C-TRAN's existing fixed route system and also marks potential extension of the system with green dashed lines. Table 3-5 describes the existing fixed-route bus system.

Table 3-5: C-TRAN Fixed Route System (January 1999)

C-TRAN FIXED SYSTEM - BUS ROUTES (January 1999)							
Bus Route Number	**Route Name**	**Weekday Service First Run Begins**	**Weekday Service Last Run Begins**	**Weekday Service Frequency**	**Saturday Service**	**Sunday/ Holiday Service**	**Area Served** (TC = Transit Center; P&R = Park and Ride)
1	Fruit Valley	5:35 am	9:27 pm	30 mins	Yes	Yes	7th St TC to west side Vancouver
2	Capitol Hill	5:15 am	9:45 pm	30 mins	Yes	Yes	7th St TC to JM Plaza
3	Rosemere/ Brandt	5:28 am	9:45 pm	35 mins	Yes	Yes	7th St TC to close-in east-side Vancouver, including Vancouver Memorial Hospital
4	Fourth Plain	5:10 am	10:20 pm	15 mins	Yes	Yes	7th St TC to Vancouver Mall, via 4th Plain
6	Hazel Dell	5:07 am	10:30 pm	23 mins	Yes	Yes	7th St TC to Salmon Creek P&R via Hazel Dell Ave
7	Battle Ground	5:45 am	9:30 pm	45 mins	Yes	Yes	Van Mall TC to Battle Ground
8	Ridgefield/ La Center	6:15 am	6:34 pm	Peak	No	No	From Ridgefield and La Center to Salmon Creek P&R
10	Eastridge via 5 Corners	6:30 am	9:17 pm	35 mins	Yes	Yes	Vancouver Mall to Orchards area
11	Columbia Shores	5:45 am	9:25 pm	30 mins	Yes	Yes	7th St TC to Water Resources Education Center
12	112th Avenue	5:15 am	9:45 pm	30-60 mins	Yes	Yes	Evergreen TC to Vancouver Mall
18	Parker Loop	5:15 am	9:38 pm	30-60 mins	Yes	No	Evergreen TC to Parker St via 162nd , SE 1st, Payne Rd, SE 34th
21	Felida	5:45 am	9:30 pm	30-45 mins	Yes	Yes	7th St TC to Salmon Creek P&R via Hwy 99, NE 78th St and NW 36th Ave
25	St. John's	5:45 am	9:30 pm	30 mins	Yes	Yes	7th St TC to Salmon Creek P&R via Minnehaha area and WSU
30	Burton	4:55 am	10:45 pm	23-60 mins	Yes	Yes	7th St TC to Evergreen TC via Burton Road
31	Sifton via Orchards	6:15 am	8:59 pm	35 mins	Yes	Yes	Vancouver Mall to Sifton/Orchards
32	Evergreen	5:15 am	9:45 pm	35 mins	Yes	Yes	7th St TC to Van Mall, via Evergreen Blvd
33	Camas/ Washougal	6:40 am	9:10 pm	60 mins	Yes	Yes	Local Camas/Washougal service
37	Mill Plain	4:50 am	10:15 pm	20 mins	Yes	Yes	7th St TC to Evergreen TC via Mill Plain Blvd

C-TRAN FIXED SYSTEM - BUS ROUTES (January 1999)							
Bus Route Number	**Route Name**	**Weekday Service First Run Begins**	**Weekday Service Last Run Begins**	**Weekday Service Frequency**	**Saturday Service**	**Sunday/ Holiday Service**	**Area Served** (TC = Transit Center; P&R = Park and Ride)
38	MacArthur/ Cascade Park.	5:21 am	9:41 pm	30-60 mins	Yes	Yes	7th St TC to Fisher's Landing
41	Hearthwood/ Camas	5:45 am	8:45 pm	30-60 mins	Yes	No	Evergreen TC to Camas
71	Highway 99	4:55 am	10:00 pm	23 mins	Yes	Yes	7th St TC to Salmon Creek P&R via Hwy 99
74	Battle Ground/ Yacolt/Amboy	7:15 am	7:12 pm	Peak	No	No	Battle Ground to Yacolt, Chelatchie Prairie and Amboy
78	78th Street	6:00 am	10:00 pm	24-48 mins	Yes	Yes	Vancouver Mall to NW 9th Ave & NW 82nd St via NE 78th St
97	Downtown Vancouver Free Shuttle	6:20 am	7:00 pm	20 mins	Yes	No	Downtown Vancouver
98	Marshall Center/ Officers' Row Free Shuttle	9:00 am	2:00 pm	30 mins mid-day	No	No	Downtown Vancouver to Marshall Center
99	99th Street	6:16 am	10:18 pm	24-28 mins	Yes	Yes	Vancouver Mall to NW 9th Ave/NW 82nd St via NE 99th St
105	Express via I-5	5:15 am	7:15 pm	10-60 mins	No	No	7th St TC to Downtown Portland
114	Camas/ Washougal Express	6:35 am	5:15 pm	1 trip a.m. 1 trip p.m.	No	No	Camas/Washougal via 7th St TC to Downtown Portland
134	Salmon Creek Express	5:15 am	7:15 pm	Peak 5-30 mins	No	No	Salmon Creek P&R to Downtown Portland
154	BPA Express	5:50 am	5:45 p.m.	Peak 4 trips a.m. 6 trips p.m.	No	No	BPA Park-and-Ride to Downtown Portland
155	Lloyd Center Express			Peak 4 trips a.m. 5 trips p.m.	No	No	BPA Park-and-Ride to Lloyd Center District
173	Battle Ground Limited	5:30 am	5:15 pm	1 trip a.m. 1 trip p.m.	No	No	Battle Ground/Chelatchie Prairie to 7th St TC, Vancouver
175	Gateway Express	5:40 am	6:45 pm	25-55 mins	No	No	Evergreen TC to Downtown Portland via Gateway
176	Van Mall Ltd	5:40 am	6:45 pm	Peak 30 mins	No	No	Vancouver Mall to Gateway TC
177	Evergreen Express	5:05 am	7:12 pm	Peak 15-25 mins	No	No	Evergreen TC to Downtown Portland
190	Marquam Hill Express	6:00 am	4:45 pm	Peak 2 trips a.m. 2 trips p.m.	No	No	Van Mall to Marquam Hill via Bonneville Power Ross Complex Park and Ride

C-TRAN FIXED SYSTEM - BUS ROUTES (January 1999)							
Bus Route Number	**Route Name**	**Weekday Service First Run Begins**	**Weekday Service Last Run Begins**	**Weekday Service Frequency**	**Saturday Service**	**Sunday/ Holiday Service**	**Area Served** (TC = Transit Center; P&R = Park and Ride)
191	Swan Island Express	6:00 am	5:00 pm	Peak	No	No	Van Mall to Swan Island via Bonneville Power Ross Complex Park and Ride

During normal C-TRAN service hours, a connection is provided between the Vancouver Amtrak Station and the 7th Street Transit Center. All of the C-TRAN local routes now use buses equipped with wheelchair lifts making them accessible to people with disabilities. C-TRAN also operates a paratransit service, C-VAN. C-TRAN's paratransit service plan is described in their publication *1997 C-TRAN ADA Paratransit Service Plan* (January, 1997). C-TRAN attained full compliance with the ADA in January of 1997. C-TRAN had a fleet of ten paratransit vehicles in 1991 and anticipates a fleet of sixty by 2000.

Table 3-6: C-TRAN; Paratransit Service

C-TRAN PARATRANSIT SERVICE (C-VAN)		
Year	**Paratransit Trips**	**Paratransit Revenue Hours Per Year**
1994	99,036	32,212
1995	115,841	41,803
1996	142,495	48,317
1997	170,816	56,728
1998	186,665	67,769
1999 (to end July, 1999)	110,097	37,532

All of C-TRAN's buses are also equipped with bicycle racks. C-TRAN runs a training program to prepare bicyclists for use on transit.

C-TRAN's facilities include transit centers and park-and-ride lots described in Table 3-6, below. C-TRAN uses security measures to make the transit system safe for its users. These security measures include provision of private security patrols at the Seventh Street Transit Center in Downtown Vancouver, the Salmon Creek Park and Ride, the Evergreen Transit Center and Vancouver Mall Transit Center. The City of Vancouver's Police Department bike patrol regularly patrols the 7th Street Transit Center. C-TRAN has contracted with the City of Vancouver to ensure that the bike patrol monitors the 7th Street Transit Center. C-TRAN buses are equipped with emergency alarms and two-way radios. Additionally, randomly placed surveillance cameras are located on various buses. Customer service facilities are located at both the 7th Street and Vancouver Mall Transit Centers, and public restrooms are located at 7th Street and Evergreen. Passenger shelter, bench, and waiting facilities are provided at most of the park and ride lots. Bicycle locker or rack facilities are provided at some of the lots.

Table 3-7: C-TRAN; Transit Centers and Park and Ride Facilities (September 1999)

C-TRAN TIME TRANSFER CENTERS AND PARK AND RIDE FACILITIES (SEPTEMBER 1999)			
FACILITY	**TRANSIT CENTER/ PARK-AND-RIDE**	**PARKING SPACES**	**BUS ROUTES**
Downtown Vancouver, 7th Street Transit Center	Transit Center	N/A	1, 2, 3, 4, Tri-Met 5, 6, 11, 21, 25, 30, 32, 37, 38, 71, 97, 98, 105, 114, 173
Vancouver Mall	Transit Center	N/A	4, 7, 10, 12, 31, 32, 78, 99, 176
Evergreen Transit Center	Transit Center and Park-and-Ride	279	12, 18, 30, 37, 41, 175
Salmon Creek	Park-and-Ride	436	6, 8, 25, 71, 134
BPA Ross Complex	Park-and-Ride	200+	154, 155, 190, 191
Vancouver Mall (Regal Cinemas)	Park-and-Ride	60+	4, 7, 10, 12, 31, 32, 78, 99, 176
Battle Ground	Park-and-Ride	28	7, 173, 174
Camas/Washougal	Camas Transfer Center Washougal Park-and-Ride	20	33, 41, 114 33,114
NE 179th Street	Park-and-Ride	20	8, 173
NE 269th Street	Park-and-Ride	48	8

All of C-TRAN's fixed route system and facilities are included as part of the designated regional transportation system.

Greyhound provides **INTER-CITY BUS** service in the I-5 corridor from its bus depot in Downtown Vancouver.

Clark County has three **PORT DISTRICTS**; the Port of Vancouver, the Port of Camas-Washougal and the Port of Ridgefield.

The **Port of Vancouver** operates an international cargo dock used by over 440 ships, carrying over 5.6 million metric tons of cargo, a large percentage of which was grain, in 1995. The Port is expanding its dry bulk handling facilities. The Port also has industrial property with around forty tenants and holds property in the Vancouver Lake Lowlands for future development of recreational facilities, a business park, industrial sites and expansion of its marine terminal operations.

The **Port of Ridgefield**'s taxing district extends over 110 square miles of land. Port-owned assets include a 78-acre industrial park, located near the I-5/269th interchange and N.W. Timm

Road, and a golf course. The Port's land adjacent to the Ridgefield Junction is zoned for light industrial use and currently houses six businesses. The Port also holds 4,615 acres of the Ridgefield Wildlife Refugee, parcels of land within the Ridgefield city limits totaling less than 5 acres and has 5 acres of industrial-zoned land on the Lake River waterfront.

The **Port of Camas/Washougal**'s taxing district extends over 95 square miles of land with an industrial park, marina, airport, a park and wildlife refuge. The 430-acre industrial park, located south of SR-14 by Index and 27th to 32nd Streets, has 25 industries each employing between 1 and 164 people. The marina has moorage to accommodate 330 plus 25 additional spaces for guests, a restaurant, two yacht clubs and a boat launch. The Port district also operates Grove Field Airport (described in a later section).

There are two main **RAIL LINES** in use in the County which provide freight and passenger service. Both main lines are owned by Burlington Northern/Santa Fe (BNSF). In addition, a privately owned rail line in the county also offers freight and tourist train passenger service.

The BNSF Seattle/Vancouver line is in excellent condition and has 70 to 80 trains operating in the corridor each day. The Vancouver/Eastern Washington line is also in excellent condition and handles about 35 trains daily. The Rye Branch is a short segment which diverges from the main northern line around N.W. 78th Street to Rye yard off St. John's Road. The track is in fair condition; freight trains use it about twice weekly. Union Pacific Railroad operates some freight trains to Tacoma and Seattle on BNSF's lines. AMTRAK has an agreement with BNSF to operate passenger service on the freight carrier's rail lines. AMTRAK trains serve Vancouver daily. The *Coast Starlight* travels between Seattle and Los Angeles via Vancouver and Portland, the *Mount Rainier* travels between Seattle and Eugene, Oregon, the *Empire Builder* travels between Chicago and Spokane with one part of the train continuing on to Seattle and the other part continuing on, via Pasco and Bingen-White Salmon, to Vancouver and the service terminates in Portland. In October, 1994, an additional Portland-Seattle run, the *Mount Adams*, sponsored by Washington State, was added to increase the reliability of rail travel for regional intercity travel in the northwest. Service now continues to Eugene, Oregon. The *Mount Baker*, sponsored by Washington State, now runs between Seattle and Vancouver, British Columbia, Canada daily. In August 1995, there were 44,000 train riders on the Eugene to Vancouver B.C. line and in August 1996 the ridership had increased to 51,000; a 15% increase.

Today, rail corridor planning is moving ahead. The Pacific Northwest Rail Corridor is one of only five designated high-speed corridors in the nation which pre-qualifies the region for federal high-speed rail funding. In late 1995, the Washington State Department of Transportation (WSDOT) and project partners released the *Options for Passenger Rail in the Pacific Northwest Rail Corridor* report. An Environmental Impact Statement on corridor improvements should be complete and construction on some rail system improvements began in 1998. In addition, three custom-built Talgo trains will be in service on Amtrak's Pacific Northwest Rail Corridor service. Plans are underway to upgrade the Vancouver Amtrak station facility and site as part of the Eugene to Vancouver B.C. passenger rail service improvements in preparation for high speed rail service in the corridor. For a description of the Commuter Rail Study and conclusions it reached

regarding future capacity of rail corridors in the region, please see Chapter 5, Commuter Rail/Rail Capacity Issues section.

The Lewis & Clark Railway line is county-owned but leased to a private operator. The 30 mile line extends from the Rye yard to Chelatchie Prairie. Freight cargo deliveries of plasterboard, plastics, chemicals and machinery can be made to local industries.

For **AIR TRANSPORTATION**, Clark County largely relies on the Portland International Airport (PIA) located in Portland, Oregon to the south-west of the I-205 Glenn Jackson Bridge. This is a regional airport with domestic and international passenger and freight service. Passenger airlines currently serving PIA include Alaska, Continental, Delta, Delta Connection, United, United Express, American, TWA, Northwest, America West, Horizon, Southwest, Reno Air, Hawaiian, Frontier, Harbor Air, Skywest, and Air BC. PIA has seen rapid growth in passenger numbers and freight in recent years and now consistently serves over 1 million passengers per month. In 1998, passenger numbers surpassed 13 million for the first time. 1998 cargo was 267,788 tons. July 1999 passengers served by PDX exceeded 1.38 million, beating all previous monthly records. The airport is served by Tri-Met public passenger bus service from Portland.

Within Clark County, the following general aviation airfields are in operation: (1) Pearson Field, located 2 miles south west of Downtown Vancouver off SR-14, is operated by the City of Vancouver and covers 134 acres owned by the U.S. Park Service. The Airpark has one paved runway (3,200 feet by 60 feet) and can accommodate 177 aircraft. The Airpark is on the Washington State Historical Register. Pearson is designated as a part of the regional transportation system. 2) Evergreen Airport is located six miles east of Vancouver, off Mill Plain. It is a privately-owned, 102-acre airfield with one asphalt and two turf runways, 99 hangars and 170 tie-downs providing a base for 250 planes. (3) Grove Field, located 3 miles north of the City of Camas, is operated by the Port of Camas\Washougal. It has one turf runway, 31 hangars and can accommodate 42 aircraft on its 42 acre site. Estimates of aircraft operations at the three airfields are provided in Table 3-8. In addition, there are a number of private airfields located in Clark County which include those described below. Taylor's Green Mountain Airpark is a 23-acre facility, located 9 miles east of downtown Vancouver with one paved runway, six hangars and ten-tie downs. Eight aircraft are based at the Airpark. Goheen Airport, located three miles northwest of Battle Ground, is privately owned. It has one turf runway and provides a base for about 18 planes. 45 acres of Goheen's 60 acre area are zoned for airport use.

The Washington State Department of Transportation's Aeronautics Division and the local pilots' association have proposed that an additional airport should be sited in Clark County because of the vulnerability of existing airfields in the County due to ownership issues and development pressures. Efforts in the 1980's to site such a facility were thwarted when neighborhood residents opposed a proposed airport location in the vicinity of the I-5/Ridgefield Junction. Federal and state agencies and local jurisdictions have to work together to site such facilities and local jurisdictions must ensure that the land uses surrounding the facility are compatible with aircraft operations and remain that way.

Table 3-8: Aircraft Operations Estimates

AIRCRAFT OPERATIONS ESTIMATES 1998 from *Washington State Continuous Airport System Plan* (WSDOT/Aeronautics)								
	Based Aircraft:							
Airport Name All are Private	**Single Engine**	**Multi-Engine**	**General Aviation Local**	**General Aviation Itinerant**	**Air Carrier**	**Air Taxi**	**Commuter**	**Military**
Evergreen Field (Vancouver)	240	5	170,000	30,000			0	50
Fly for Fun (Clark County)	9		500	2,500	0	0	0	0
Goheen (Battle Ground)	35		1,350	270	0	0	0	0
Grove Field (Camas)	60	1	5,600	7,000			0	0
Pearson Field (Vancouver)	210	10	23,228	84,201		3,471	0	1,100

Notes:
(1) No regional airlines or major national airlines serve Clark County airports/airfields

Source: FAA 5010 Forms; Airport Management Records; Washington State Aeronautics Division Records

CURRENT AND FUTURE REGIONAL TRANSPORTATION SYSTEM PERFORMANCE

GROWTH IN TRAFFIC VOLUMES

As a result of socio-economic and demographic changes described in Chapter 2 Clark County has seen significant growth in traffic volumes in recent years. The MPO compiles traffic count data from local jurisdictions and periodically publishes data in the *Regional Traffic Count Manual*. Traffic count data is factored to adjust for seasonal, monthly, weekly and daily fluctuations in volumes. Examples of growth in traffic volumes at selected Clark County locations are listed in Table 3-9 below.

Permanent traffic recorders are in place on the I-5 and on the I-205 bridges. RTC compiles the traffic counts provided by Oregon Department of Transportation from these recorders. In March, 1995 RTC published the *Columbia River Bridge Traffic, 1961 - 1994* report. This data is now updated annually and is available on RTC's web site (http://www.rtc.wa.gov/tc/brdgawd.htm). Figure 3-4 shows the average weekday traffic volumes crossing the Columbia river bridges, 1978 to 1998. The most recent traffic counts available for the two bridges are for June, 1999. In June, 1999 the average daily traffic for the month on the I-5 Interstate Bridge was 127,989 [ADT] (132,185 average weekday traffic [AWD]). On the I-205 Glenn Jackson Bridge, the average weekday daily traffic for the month of June, 1999 was 131,128 [ADT] (137,917 average weekday traffic [AWD]). In June 1999, the maximum weekday evening peak hour I-5 Interstate Bridge

northbound crossings were 5,682 and 7,710 northbound on the I-205 Glenn Jackson Bridge. In June 1999, maximum weekday morning peak hour crossings were 5,787 southbound on the I-5 Interstate Bridge and 7,097 crossings southbound on the I-205 Glenn Jackson Bridge.

Table 3-9: Traffic Volumes; 1985, 1996

TRAFFIC VOLUMES - ALL DAY (ADT)				
Location	**1985 Volumes**	**1996 Volumes**	**% Increase**	**Annual % Increase**
I-5 Bridge	92,301	118,557	28.45	2.59
I-205 Bridge	52,568	113,345	115.62	10.51
I-5, South of NE 78th St	52,784	75,106	42.29	3.84
I-205, South of SR-500	40,440	85,035	110.27	10.02
SR-14, West of SE 164th Ave	22,600	53,882	138.42	12.58
Mill Plain, West of NE Andresen	17,232	22,767	32.12	2.92
Mill Plain, West of NE Chkalov	36,859	63,904	73.37	6.67
Fourth Plain, West of NE Andresen	16,060	26,180	63.01	5.73
SR-500, West of NE Andresen	20,054	45,513	126.95	11.54
SR-503, South of NE 76th St	17,460	30,538	74.90	6.81
78th St, West of Hwy 99	23,646	31,234	32.09	2.92
Hwy 99, South of NE 99th St	19,653	22,999	17.03	1.55

The highest daily traffic ever recorded on the I-5 Interstate Bridge was on Friday June 18, 1999 when 149,847 bridge crossings were made. The highest evening peak hour traffic ever recorded on the I-5 Bridge was on Tuesday May 28, 1996 when 10,838 bridge crossing were made; of these 5,520 were northbound and 5,318 were southbound. For the northbound direction, the highest evening peak hour traffic was recorded on Thursday June 11, 1998 when 5,987 bridge crossings were made. For the southbound direction, the highest morning peak hour traffic was recorded on Wednesday May 10, 1995 when 6,069 bridge crossings were made.

The I-205 Glenn Jackson Bridge's highest daily crossings ever recorded was on Friday September 19, 1997 with 158,982 crossings. This was during the I-5 bridge repair project which closed the northbound span of the I-5 bridge. The highest evening peak hour traffic recorded on the I-205 Glenn Jackson Bridge was on Friday May 24, 1996 (Memorial Day weekend) when 12,800 bridge crossings were made. Of these bridge crossings, 8,426 were northbound and 4,374 were southbound. The highest northbound evening peak hour traffic recorded on the Bridge is the 8,426 crossings made on Wednesday Friday May 24, 1996. For the southbound direction, the highest morning peak hour traffic was recorded on Tuesday October 27, 1998 when 8,020 bridge crossings were made.

Regional transportation system intersections with the highest traffic volumes, measured in terms of number of vehicles entering intersection are listed in Table 3-10.

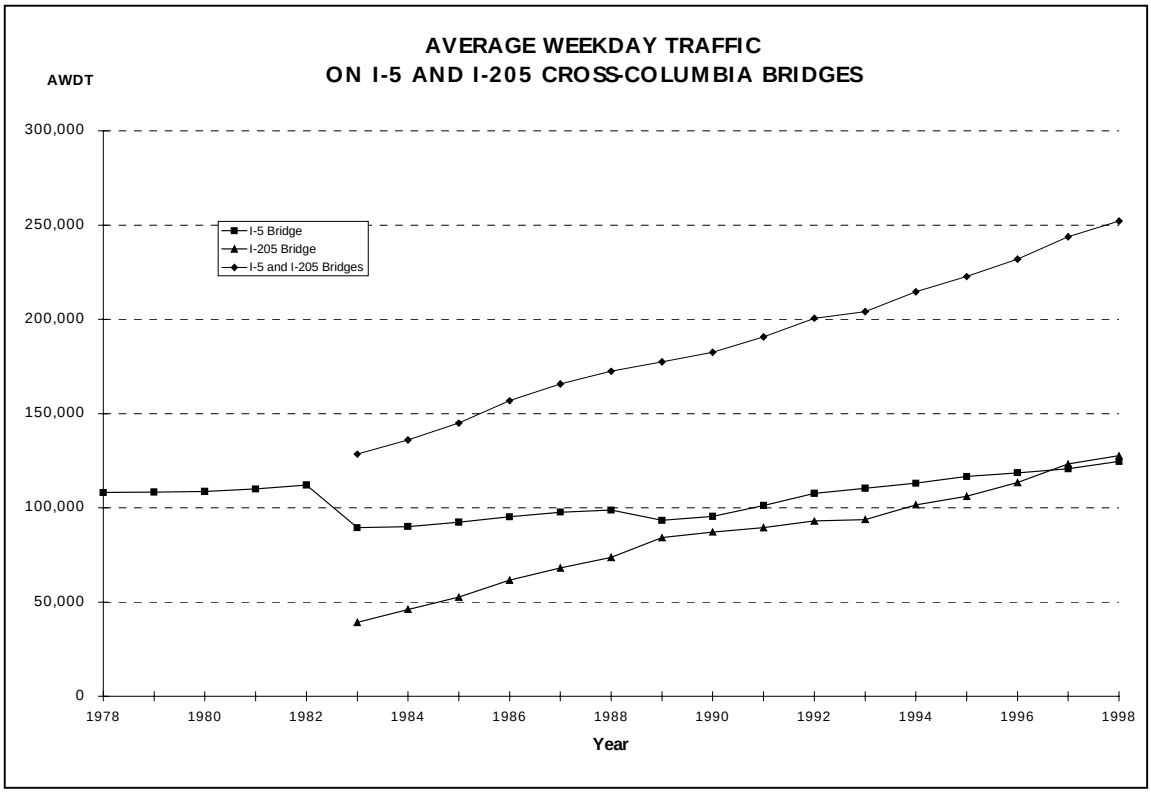


Figure 3-4: I-5, I-205 Average Weekday Bridge Crossings

CLARK COUNTY HIGHEST VOLUME INTERSECTIONS - 1998			
Rank	**East-West**	**North/South**	**Approx. Volume**
1	State Route 500	Gher Rd/NE 112th Avenue	89,000
2	State Route 500	Thurston Way	85,000
3	Mill Plain Blvd.	Chkalov Drive	73,000
4	State Route 500	State Route 503	72,000
5	State Route 500	St. John's Road	64,000
6	Fourth Plain Blvd.	Andresen Road	59,000
7	State Route 500	NE 54th Avenue	57,000
8	State Route 500	NE 42nd Avenue	53,000
9	Mill Plain Blvd.	NE 123rd/124th Avenue	52,000
10	NE 76th Street	State Route 503	51,000
11	NE 78th Street	Highway 99	49,000
12	Mill Plain Blvd.	136th Avenue	49,000
13	Mill Plain Blvd.	Andresen Road	44,000
14	Mill Plain Blvd.	Hearthwood Blvd.	41,000
15	State Route 500	NE 121st Avenue	40,000

Notes: Volumes are based on the total number of vehicles entering an intersection on an average weekday, and are approximate due to the variability from year to year. Freeway ramp intersections with streets were not considered for this listing
Source: RTC's Regional Traffic Count Program.

Table 3-10: Highest Volume Intersections in Clark County, 1998

REGIONAL TRAVEL FORECASTING MODEL: FORECASTING FUTURE TRAVEL DEMAND AND TRANSPORTATION NEEDS

The Regional Travel Forecasting Model for the Clark County region was used to forecast future traffic volumes on the regional transportation system. EMME/2 software is used for the Clark County region's travel forecasting model. In the modeling process, a base year of 1996 was used and a forecast to the year 2020 was made. Growth allocations for future population, housing and employment (as described in Chapter 2) and existing local comprehensive land use plans and zoning were used as a basis for forecasting future population and employment distributions within Clark County. The regional model uses demographic data as a basis for travel forecasts and the data is run through trip generation, trip distribution, mode split and trip assignment processes. Alternative land use scenarios were tested, and their effect on regional transportation needs measured, as a part of the Growth Management planning process. This regional travel forecasting model for the MTP is based on GMA plans.

Trips can be classified according to place of trip production and purpose of trip. The regional travel forecasting model for Clark County categorizes trips into six groups, they are Home-Based Work, Non-Home-Based Work, Home-Based Other, Non-Home-Based Other, School and College trips. Figure 3-5 show the proportion of trips in each of these categories for average weekday Clark County-produced person trips. In Figure 3-5 College and School trips have been aggregated.

Figure 3-5 shows that in the 1996 base year the largest proportion of trips during a 24-hour period are Home-Based-Other trips (44%). This category can include trips from home to the grocery store, home to leisure activities etc. The second highest category is Home-Based Work trips (21%). Non-Home Based Other trips make up 17% of the trips. This category can include such trips as shopping mall to restaurant trips. The home-based categories include trips originating at home and going to a destination as well as the return trip home. The proportions for the year 2020 are 42% Home-Based-Other trips, 21% Home-Based-Work trips and 19% Non-Home Based Other. From 1996 to 2020 there is forecast to be a 66% increase in all-day person trips from around 1,294,000 trips per day in 1996 to over 2.1 million in 2020.

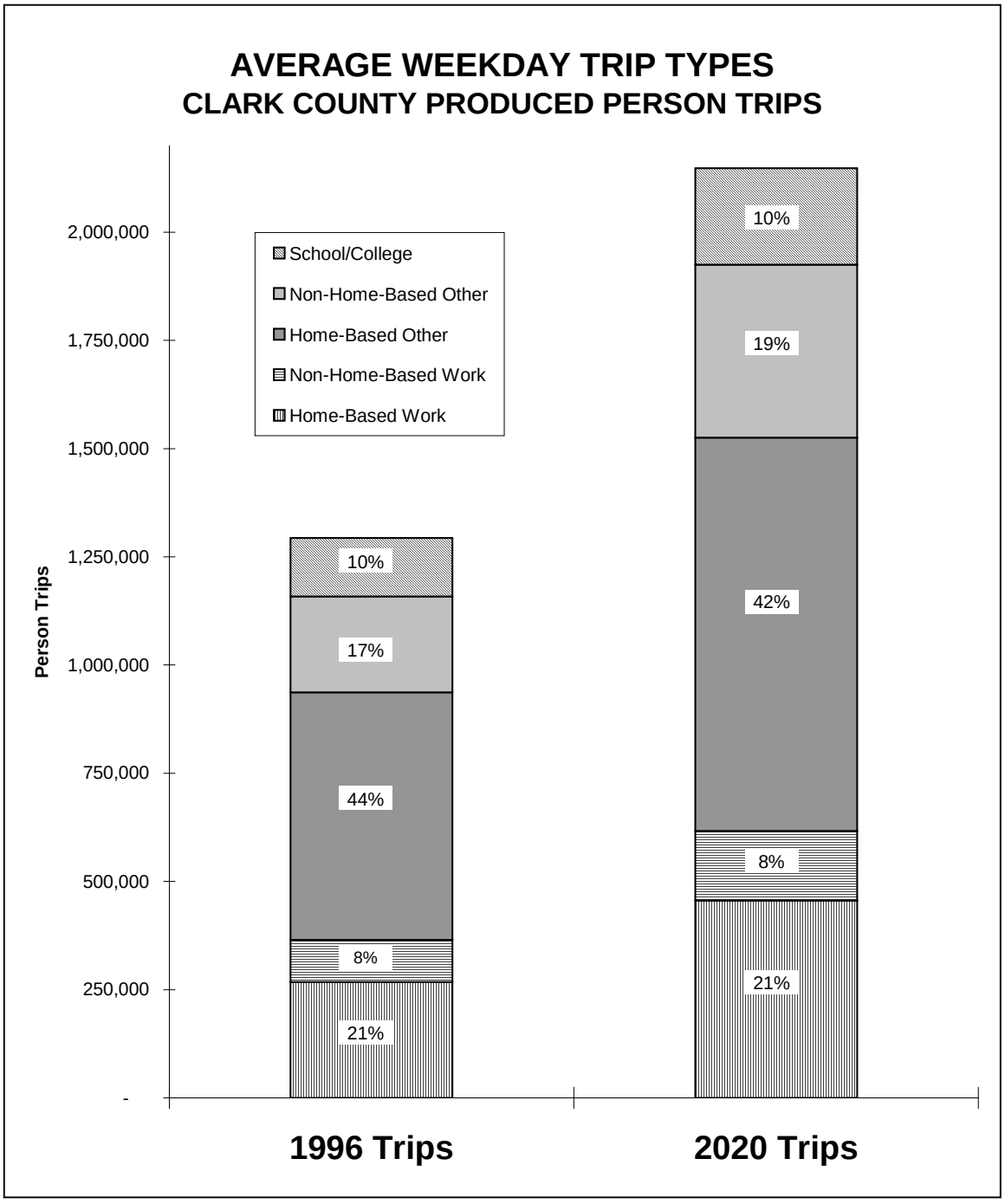


Figure 3-5: Average Weekday Trip Types, Clark County Produced Person Trips

Trips can also be categorized according to where the trips begin and end. Figure 3-5 shows proportions of trips which use the Clark County highway system in terms of those trips which remain in Clark County (87%) and those trips which cross the Columbia River (13%).

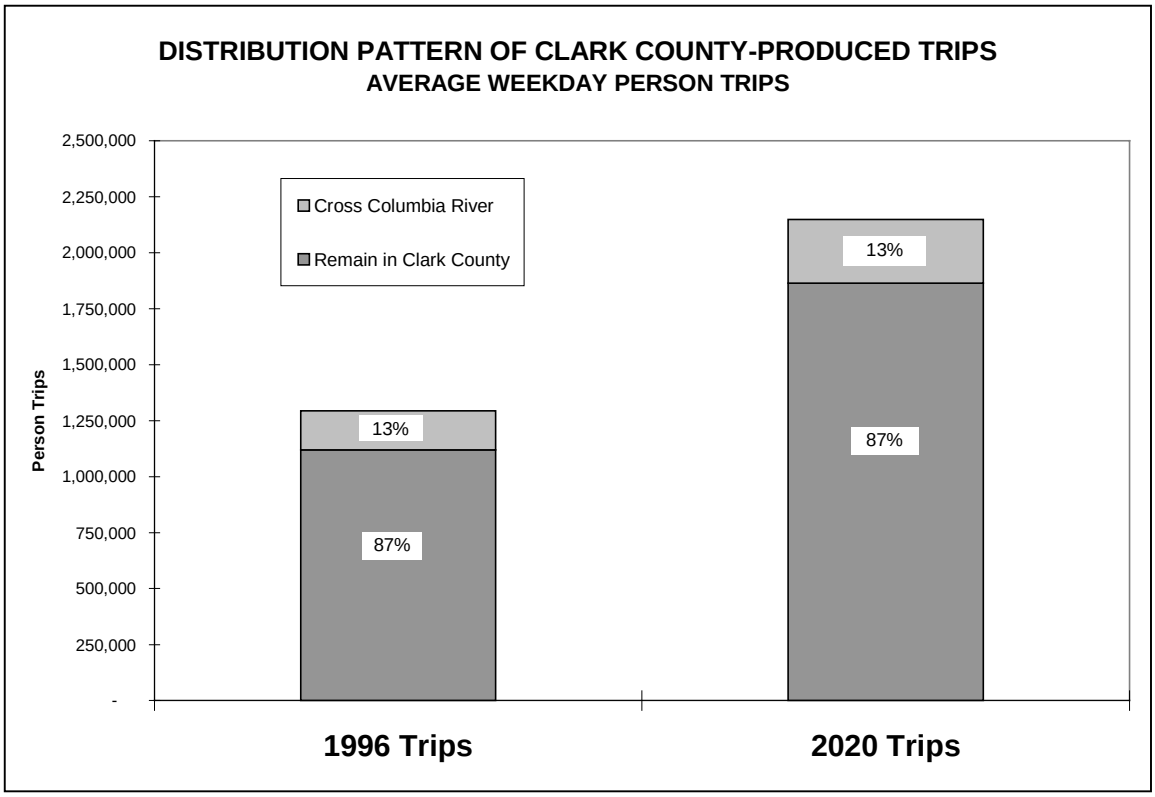


Figure 3-6: Distribution Patterns of Clark County Produced Person Trips, Average Weekday

Needs analysis was then carried out to determine what impact this forecast growth in travel demand might have on the transportation system. In carrying out analysis of existing and future transportation needs the regional travel forecasting model was used to run three scenarios:

Base-Year 1996 traffic volumes on 1996 highway network

2017 Forecast 2017 traffic volumes on 2017 MTP highway network

No-Build Forecast 2020 traffic volumes on "committed" highway network.

The "committed" network has improvements projects for which funds are already committed in the Metropolitan Transportation Improvement Program.

MTP (Year 2020) Forecast 2020 traffic volumes on 2020 highway network with *MTP* improvements listed in Appendix A.

MTP improvements are those improvements programmed in the metropolitan *2000-2003 Transportation Improvement Program* and projects for which there is an identified regional need and strong regional commitment.

Tables 3-11, 3-12, 3-13 and 3-14 present system-wide benchmark results from testing the scenarios described above. Each table presents data by functional classification.

Table 3-11: P.M. Peak Hour Speed

AVERAGE PEAK HOUR SPEED ON CLARK COUNTY HIGHWAYS (Results from Regional Travel Forecasting Model, using EMME/2 software)				
	Speed in Miles per Hour			
Facility Type/Region	**Base-Year 1996**	**2017 (for comparison)**	**No-Build (2020 demand on Committed System)**	**2020 MTP**
Interstates (excluding Ramps)	51	34	27	32
Interstates (including Ramps)	49	33	27	32
Expressways & Principals	36	35	29	34
Minor Arterials	34	32	28	32
Major & Minor Collectors	34	33	31	32
Other Roads	28	28	27	28
Total Clark County System	38	33	29	32

Table 3-12: Peak Hour Vehicle Miles Traveled

VEHICLE MILES TRAVELED ON CLARK COUNTY HIGHWAYS IN P.M. PEAK HOUR (Results from Regional Travel Forecasting Model, using EMME/2 software)				
	Miles of Travel			
Facility Type/Region	**Base-Year 1996**	**2017 (for comparison)**	**No-Build (2020 demand on Committed System)**	**2020 MTP**
Interstates (excluding Ramps)	166,162	238,067	250,909	262,920
Interstates (including Ramps)	183,541	265,373	275,277	290,469
Expressways & Principals	169,431	257,828	279,207	285,154
Minor Arterials	75,326	117,238	136,717	132,890
Major & Minor Collectors	90,752	160,997	201,380	182,354
Other Roads	11,204	20,048	23,993	23,037
Total Clark County System	530,254	821,484	916,574	913,904

Table 3-13: Peak Hour Lane Miles of Congestion

LANE MILES OF CONGESTION IN P.M. PEAK HOUR (Results from Regional Travel Forecasting Model, using EMME/2 software)				
	Lane Miles of Congestion			
Facility Type/Region	Base-Year 1996	2017 (for comparison)	No-Build (2020 demand on Committed System)	2020 MTP
Interstates (excluding Ramps)	3	29	49	35
Interstates (including Ramps)	5	36	55	41
Expressways & Principals	8	34	99	46
Minor Arterials	2	15	44	20
Major & Minor Collectors	5	18	45	28
Other Roads	0	2	5	3
Total Clark County System	19	105	247	138

Table 3-13 (above) presents data on congestion on the Clark County highway system. This measure represents the number of lane miles that operate under congested conditions (at volume to capacity ratio of 0.9 or above; equivalent to level of service E or F) during the full p.m. peak hour. The table is of most use when used to assess the relative growth in congestion which is expected to occur in the future, given the forecast increase in travel demand.

Table 3-14: Peak Hour Vehicle Hours of Delay

P.M. PEAK HOUR VEHICLE HOURS OF DELAY - CLARK COUNTY HIGHWAYS (Results from Regional Travel Forecasting Model, using EMME/2 software)				
	Hours of Vehicle Delay			
Facility Type/Region	Base-Year 1996	2017 (for comparison)	No-Build (2020 demand on Committed System)	2020 MTP
Interstates (excluding Ramps)	164	2,582	3,292	4,457
Interstates (including Ramps)	208	2,708	3,421	4,686
Expressways & Principals	135	633	913	2,065
Minor Arterials	26	121	205	568
Major & Minor Collectors	36	222	366	627
Other Roads	12	33	41	67
Total Clark County System	416	3,717	4,946	8,013

Table 3-14 presents vehicle hours of delay. Using the time taken to travel a highway segment at level of service C as a base condition, any road segment operating at LOS D, E or F is measured against the level of service C base condition. The time difference is calculated, aggregated for the entire highway system and the result is Vehicle Hours of Delay. The data is of use in analyzing the relative increase in delay expected to occur, given the forecast growth in travel demand.

The preceding system-wide data represents measures of assessing highway system performance, but perhaps more meaningful is an analysis of performance and needs within corridors or on individual system links and at intersecting points. A planning level of analysis, using capacity analysis and level of service standards criteria, was carried out resulting in a first-cut analysis of existing and forecast future deficiencies of the regional transportation system.

LEVELS OF SERVICE

Level of service standards represent the minimum performance level desired for transportation facilities and services within the region. They are used as a gauge for evaluating the quality of service on the transportation system and can be described by travel times, travel speed, freedom to maneuver, traffic interruptions, comfort, convenience, and safety. The Washington State Growth Management Act states that these standards should be established locally and standards should be regionally coordinated. The standards are used to identify deficient facilities and services in the transportation plan, and are also to be used by local governments to judge whether transportation funding is adequate to support proposed land use developments.

Levels of service are defined as "qualitative measures describing operational conditions within a traffic stream, and their perception by motorists and/or passengers". A level of service definition generally describes these conditions in terms of such factors as speed and travel time, volume conditions, freedom to maneuver, traffic interruptions, comfort and convenience, and safety. These levels of service are designated A through F, from best to worst. Level of service E describes conditions approaching and at capacity (that is, critical density).

For uninterrupted flow conditions (such as freeways and long sections of roadways between stop signs or signalized intersections), the following definitions[1] apply:

- Level of Service A describes free flow conditions, with low volumes and high speeds. Freedom to select desired speeds and to maneuver with the traffic stream is extremely high. The general level of comfort and convenience provided to the motorist, passenger, or pedestrian is excellent.

- Level of Service B is in the range of stable flow but the presence of other users in the traffic stream begins to be noticeable. Freedom to select desired speeds is relatively unaffected, but there is a slight decline in the freedom to maneuver with the traffic stream from LOS A.

[1] ..From *Highway Capacity Manual*, Transportation Research Board, 1985

- Level of Service C is still in the range of stable flow, but marks the beginning of the range of flow in which the operation of individual users becomes significantly affected by interactions with others in the traffic stream. The selection of speed is now affected by the presence of others, and maneuvering within the traffic stream requires substantial vigilance on the part of the user. The general level of comfort and convenience declines noticeably at this level.

- Level of Service D represents high-density, but stable flow. Speed and freedom to maneuver are severely restricted, and the driver or pedestrian experiences a generally poor level of comfort and convenience. Small increases in traffic flow will generally cause operational problems at this level.

- Level of Service E represents operating conditions at or near the capacity level. All speeds are reduced to a low, but relatively uniform value. Freedom to maneuver within the traffic stream is extremely difficult, and it is generally accomplished by forcing a vehicle or pedestrian to "give way" to accommodate such maneuvers. Comfort and convenience levels are extremely poor, and driver or pedestrian frustration is generally high. Operations at this level are usually unstable, because small increases in flow or minor perturbations within the traffic stream will cause breakdowns.

- Level of Service F describes forced or breakdown flow. These conditions usually result from queues of vehicles backing up from a restriction downstream. Operations within the queue are characterized by stop-and-go waves, and they are extremely unstable. It marks the point where arrival flow exceeds discharge flow.

These definitions are general and conceptual in nature, and they apply primarily to uninterrupted flow. Levels of service for interrupted flow facilities vary widely in terms of both the user's perception of service quality and the operational variables used to describe them.

CLARK COUNTY/VANCOUVER LOS STANDARDS

Capacity analysis is the estimate of the maximum amount of traffic that can be accommodated by a facility while maintaining prescribed operational qualities. The definition of operational criteria is accomplished using levels of service (as described above). The Growth Management Act requires local jurisdictions to set levels of service standards for transportation facilities and this ties in with the GMA concurrency requirement which requires that transportation and other infrastructure is available concurrency with development. Standards are to be regionally coordinated. LOS standards were coordinated during the GMA planning process and for Clark County are described in Table 3-15. In 1999, the City of Vancouver amended the existing Level of Service (LOS) standards contained in the Mobility Management element of the Comprehensive Plan. Vancouver adopted a corridor-based concurrency ordinance in March, 1998. New Vancouver level of service standards required to implement their concurrency ordinance include: 1) corridor travel times (maximum allowable travel time between two designated points along a corridor); 2) an Average Signalized Intersection Performance Standard (a quantitative standard of the performance of all signalized intersections within an identified transportation corridor or Transportation Management Zone (TMZ); and 3) Mobility Index (the maximum number or percentage of signalized intersections which may have an operating level below the Average Signalized Intersection Performance Standard.

TRANSIT LOS STANDARDS

C-TRAN also has proposed LOS standards to assess the operational quality of the transit system. The matrix outlined in Table 3-16 can be used by local jurisdictions and C-TRAN to assess whether transit system expansion would be feasible in a given area.

Table 3-15: Clark County Level of Service Standards

CLARK COUNTY LEVEL OF SERVICE (LOS) STANDARDS	
LOS B	Rural arterials not identified as LOS C or below
LOS C	Rural connectors that link urban areas to the inter-urban routes Arterials within La Center and Yacolt that are not rural connectors of inter-urban routes All Vancouver urban area roadways not defined as LOS D and were at LOS C or above under 1994 conditions High Occupancy Vehicle (HOV) lanes[1]
LOS D	Battle Ground, Camas, Ridgefield, and Washougal urban areas Vancouver Urban Area: • WSU and Vancouver Mall activity centers • Community subcenters • Arterials connecting community centers and subcenters • Arterials leading out of Vancouver Central Business District (CBD); and, • All other roadways maintain LOS D or maintain existing LOS, if at LOS D or below under 1994 conditions Rural interurban routes (predominantly state highways)
Mitigated LOS D	Major multimodal transportation corridors, LOS D consistent with WSDOT service objective H-23(b), and minimum LOS E[2] Community centers within Vancouver urban area, with existing LOS E, provided TSM or other congestion mitigation measures are in place
LOS E	Downtown Vancouver Activity Center Unsignalized arterial approaches that do not meet signal warrants or a signal is not desired per an approved access management plan for the specific corridor
Mitigated LOS E	Columbia River bridges at or below LOS E are allowed a LOS threshold of E with a 15 percent increase in V/C ratio over existing conditions (i.e. a volume/capacity ratio range of 1.05 to 1.15 vs 0.90 to 1.00).

Sources: 20 Year Comprehensive Growth Management Plan for Clark County; Clark County, (1994)
Grow[th] Management Plan for Clark County, Transportation Element; Clark County, (1994)

1 For future High Occupancy Vehicle (HOV) lanes

2 "Mitigate congestion on urban highways in cooperation with local and regional jurisdictions when the peak period LOS falls below Level of Service D". Source: Washington Transportation Commission, System Plan Service Objectives, H-23(b), approved January 26, 1993

Table 3-16: C-TRAN Level of Service Indicators

C-TRAN LOS INDICATORS									
	PLANNING INDICATORS							SUPPORTING FACTORS	
Service Classes	**Persons per Sq. Mile (Pop+Emp)**	**Peak/ Non-Peak Headways**	**Bus Stop Spacing**	**Accessibility**[2]	**Load Factor**	**Travel Time Ratio (transit/ auto)**	**Service Span (hours/day, days/week)**	**Expected Market Characteristics**	**Other Supporting Characteristics**
Commuter: Inter-state	20,000-25,000	15/NA	major P&R lots	within 5 miles of 80% of pop+emp	1.0	1.75	M-F Peak	Portland employees who live in Washington	Parking mgmt.; HOV priority treatments; P&R spaces
Commuter: Intra-state	20,000-25,000	15/NA	major P&R lots	within 3 miles of 80% of pop+emp	1.0	1.75	M-F Peak	CBD & urban growth centers; employees living in Washington suburbs	Parking mgmt.; HOV priority treatments; large # of P&R spaces
Urban Corridor Service	18,000-20,000	15/30	1/8 mile	within 1/4 mile of 75% of rural pop+emp	1.5	2.0	7 days 12-16 hrs/day	Income, special generators, age, high density residential development	Land use zoning compatibility; parking mgmt.
Urban Residential Connector Service	12,000-18,000	30/60	1/4 mile	within 1/4 mile of 80% of pop+emp	1.5	2.0	5 days 12-16 hrs/day limited weekend. & evening service	Residential development connecting to major activity centers	Parking mgmt.; zoning; land use compatibility
Rural	Policy coverage	60/120	designated pick-up locations	within 5 miles of 75% of rural pop+emp	1.0	2.0-3.0	M-F 10-12 hrs/day ltd. weekend service	Community centers, city halls, post offices	Citizen requests for service
Subscription Bus	30	as needed	NA	NA	1.0	1.15	M-F Peak	Specialized employer needs	Commute trip reduction; parking mgmt.
Vanpool	8-15	as needed	NA	NA	1.0	1.15	M-F Peak	Specialized employer needs	Commute trip reduction; parking mgmt.
C-VAN (disabled)	Policy	as needed	NA	NA	1.0	NA	7 days, 12-16 hrs/day	Elderly & handicapped	NA

[2] Accessibility is defined as the percent of households and jobs within walking distance of a transit stop, transit center, or park and ride lot.

HIGHWAY SYSTEM CAPACITY ANALYSIS

EMME/2 software was used to analyze highway system needs, in terms of capacity, for the Clark County region. Appendix A lists projects identified in the *MTP* as needed to meet existing and future forecast capacity deficiencies determined by assigning forecast 2020 trips onto the *MTP '99* highway system as described earlier in this chapter. The list contained in Appendix A notes projects which are incorporated into the *MTP '99* year 2020 regional travel forecasting model and as a result were considered as part of the air quality conformity analysis.

TRANSPORTATION SYSTEM ANALYSIS

Highway capacity is not the only consideration in analysis of the regional transportation system. Indeed, the Intermodal Surface Transportation Efficiency Act (1991) and Transportation Equity Act for the 21st Century (TEA-21) emphasize the need to develop alternative modes and increase capacity of the existing highway system through more efficient use by means of ridesharing, system management and transit use. Capacity expansion is to be resorted to after other alternatives have been considered. Such strategies are described in more detail in Chapter 5, System Improvement and Strategy Plan. In addition, Chapter 5 also addresses the need for maintenance and preservation of the existing regional transportation system, safety of the transportation system, development of non-motorized modes and high capacity transportation systems.

CHAPTER 4

FINANCIAL PLAN

OVERVIEW

Potential transportation improvement projects proposed in this Plan are intended to meet the MTP policy objective of making the most efficient use of, and enhancing, the existing transportation system. The potential highway, transit and non-motorized recommendations are designed to meet transportation planning goals:

- to provide Mobility and Accessibility
- with Cost-effective and Affordable projects
- which will minimize Environmental Impact and improve Air Quality

The availability of federal, state and local moneys will have a significant impact on the ability to fund proposed projects. This chapter describes revenue sources and discusses changes to revenue sources as a result of federal and state legislation. The projection of funding ability is based on historic funding levels. The ability of the projected funding to meet MTP costs is determined.

Transportation has traditionally been funded by "user fees". Today, the major tax sources to fund transportation are the gas tax, the Motor Vehicle Excise Tax (MVET), vehicle registration fees and transit fare box revenues. Gas tax is imposed at the federal level ($0.183 per gallon) and at the State level ($0.23 per gallon) and is devoted primarily to highway purposes.

CURRENT REVENUE SOURCES

FEDERAL FUNDING

The federal funding picture changed significantly with the passage of the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 and its successor, the Transportation Equity Act for the 21st Century (TEA-21), passed in 1998. Funding programs in ISTEA and TEA-21 allow much greater flexibility in the way money may be used. The federal funding programs now have a multimodal emphasis especially the Surface Transportation Program, which gives regions greater independence to invest in alternate modes of travel, including capital transit projects, such as High Occupancy Vehicle (HOV), Light Rail Transit (LRT), and park and ride facilities. ISTEA was considered landmark legislation because of this and because it enhanced the role of the Metropolitan Planning Organization in the programming, planning, and prioritization of STP funds, established Transportation Management Areas (TMAs), and made funding available for transportation projects to help regions meet air quality standards. A brief description of the existing funding programs available through the federal Act follows.

Interstate Maintenance (IM) Program

This program is similar to the former FAI-4R program and is intended for projects to rehabilitate, reconstruct, restore, and resurface the Interstate System. IM funds may not be used for new travel lanes, other than High Occupancy Vehicle lanes or auxiliary lanes or reconstruction. Six-

year funding is set at $23.8 billion, nationwide. The Washington State apportionment is $487.9 million over six years as outlined in the table below.

National Highway System (NHS)

National Highway System was a new funding category in ISTEA. It established a National Highway System (NHS) which consists of major roads in the U.S. including the interstate system; other routes identified for their strategic defense characteristics; routes providing access to major ports, airports, public transportation and intermodal transportation facilities; and principal arterials that provide regional service. Funding in this category may be used for a wide variety of projects. In addition to roadway construction, operational and maintenance improvements, eligible projects include: start-up for traffic management and control, infrastructure-based intelligent transportation system capital improvements, fringe and corridor parking, carpool and vanpool projects, bicycle and pedestrian projects, and wetlands and natural habitat mitigation. In certain circumstances, transit projects in the corridor are also allowed if they benefit the NHS facility. Publicly-owned intracity and intercity bus terminals are also eligible. In addition, states have the option to shift 50% of the money to the STP category, which has greater project flexibility. The funding level for the NHS program is $28.6 billion nationwide for the next six years. Estimated Washington State apportionments are outlined below:

Table 4-1: Estimated Washington NHS Allocations (in millions $)

ESTIMATED WASHINGTON NHS ALLOCATIONS (IN MILLIONS $) **(Note: The amounts shown below are authorized amounts; appropriated amounts are lower)**	
	TOTAL: Federal Fiscal Years 1998-2003
Interstate Maintenance	$487.9
National Highway System	$545.7
Totals	$1,033.6

Source: *US DOT web-site at http://www.fhwa.dot.gov/tea21*

Surface Transportation Program (STP)

This program is similar to a block grant program and combines the old Federal Primary, Federal Aid Urban, and Federal Aid Secondary categories into a single, flexible, intermodal program. Generally, it can be used for any road or bridge except for local roads or rural minor collectors, although a portion of the funds reserved for rural areas may be spent on rural minor collectors. In addition to eligibility for operational and capacity improvements to roadways, it allows for the programming of transit capital projects, intracity and intercity bus terminals, carpool projects, fringe and corridor parking, capital and operating costs for traffic monitoring, management or control, transportation enhancements, transportation planning, and transportation control measures for air quality. If an area has been designated a Transportation Management Area, as the Vancouver region has, money cannot be spent on road capacity improvements for general purpose traffic unless the improvements are part of an overall Congestion Management Plan.

Of the money received by the state, 10% must be set aside for safety projects such as hazard elimination and 10% for transportation enhancements such as pedestrian and bicycle facilities. Total funding for the STP is $33.3 billion nationwide. The table below outlines estimated STP funding available within the state of Washington for the extent of the TEA-21 (1998-2003).

Table 4-2: Estimated Washington STP Allocations (in millions $)

ESTIMATED WASHINGTON STATE STP ALLOCATIONS (IN MILLIONS $) (Note: The amounts shown below are authorized amounts; appropriated amounts will be lower)	
	TOTAL: Federal Fiscal Years 1998-2003
Enhancements	$67.5
Safety	$67.5
Distributions by Population	$337.6
Planning & Research (STP)	$17.2
Statewide Flexible	$387.8
Totals	$877.7

Source: *8/10/98 Estimates by WSDOT*

Congestion Mitigation and Air Quality Improvement Program

These funds are specifically targeted for air quality non-attainment and maintenance areas for ozone, carbon monoxide (CO) and small particulate matter (PM-10) to implement projects and strategies which reduce transportation related emissions; to implement Transportation Control Measures (TCM's) listed in Section 108 of the Clean Air Act, or the State Implementation Plan, or that the Department of Transportation or the Environmental Protection Agency has determined will contribute to attainment and maintenance of National Ambient Air Quality Standards (NAAQS). Money in this fund is apportioned by population and weighted by the severity of pollution. Funds in this category cannot be used for new highway capacity. However, construction of high occupancy vehicle lanes are allowed with the understanding that capacity may be used by single occupancy vehicles during the non-rush hour period. The Clean Air Act Amendments of 1990 require that highest priority be given to the implementation of the transportation portions of applicable SIP's and TCM's for applicable SIP's. Total six-year funding for this program is $8.1 billion, nationwide. It is anticipated that the state of Washington will receive $130.8 million for the six-year period from FFY 1998 through FFY 2003. An average of $21.8 million per federal fiscal year is received to be used in the areas with air quality problems; Seattle, Vancouver, Spokane and Yakima. RTC is one of the MPO's, statewide, which receipt of CM/AQ funds.

Bridge Replacement and Rehabilitation Program

This program provides funds to assist states in replacement and rehabilitation of deficient highway bridges and to seismic retrofit bridges on any public road. The nationwide program

provides $20.4 billion in funding. Within Washington State, about $534 million is to be received for bridge projects from 1998 through 2003. Distribution of Bridge funds to individual bridge replacement projects for local agencies is governed by policies established by the Bridge Replacement Advisory Committee (BRAC). The needed bridge projects forecast for the Clark County region over the 20-year planning period are listed in Appendix B.

High Priority (Demonstration) Projects

TEA-21 provides funding for High Priority Projects throughout the nation as identified by Congress. TEA-21 includes 1,850 such projects costing a total of $9.4 billion. In Clark County, High Priority funding is allocated to the following projects: $4 million to the Mill Plain Extension west to the Port of Vancouver and $4.721 million to the 192nd Avenue corridor in east county.

STATE FUNDING

The Motor Vehicle Fuel Tax and Motor Vehicle Excise Tax (MVET) are the two major state revenue sources for highway maintenance and arterial construction funds. Some of the programs funded by these revenue sources are described below:

Transportation Improvement Account

This program is administered by the Transportation Improvement Board (TIB) and provides funding for projects to improve the mobility of people and goods in Washington State's urbanized areas. The TIB encourages projects which are coordinated among government agencies and provide for public/private participation. The TIA urban program requires a minimum 20% local match.

Urban Arterial Trust Account (UATA)

The Transportation Improvement Board also administers Urban Arterial Trust Account (UATA) funds. The program is to improve the existing city and urban county arterial street system to reduce congestion, strengthen the structural ability to carry traffic loads, address roadway width deficiencies, provide improvements to reduce accident rates, and implement traffic management to maximize mobility of people and goods. A minimum 20% local match is required.

The table below provides an example of annual statewide funding overseen by the Transportation Improvement Board (TIB):

Table 4-3: Transportation Improvement Board Funding Programs

TRANSPORTATION IMPROVEMENT BOARD FUNDING PROGRAMS			
FundingProgram	**Eligible Agencies**	**Type of Projects**	**Funds** **a) 1999 Statewide** **b) 1999 Clark County** **c) 1997-99 Statewide** **d) Clark Co. (historical)**
Transportation Partnership Program (TPP)	Urban Counties, Cities > 5,000 Population, Transportation Benefit Districts	Regionally Significant, Improve Mobility and Economic Dev., Multijurisdictional, Multi-modal, Public/Private Coop.	a) $58.2 million b) $9.9 million c) $122.0 milliond) 62.3 million
Arterial Improvement Program (AIP)	City and County Arterial Streets (Within Federal Urban Area Boundary)	Improve Mobility, safety, address geometric and structural deficiencies	a) $41.3 million b) $5.4 million c) $57.2 milliond) 25.3 million
Small City Program (SCP)	Incorporated cities with population < 5,000	Address Structural Condition, Lane and Shoulder Width Deficiencies, Safety Issues	a) $5.8 million b) $0.143 million c) $7.9 million d) $1.2 million
Pedestrian, Safety & Mobility Program (PSMP)	Urban and Small City	Enhance and Promote Pedestrian Mobility, Safety, System Continuity and Connectivity	a) $4.7 million b) $0.162 million
Public Transportation Systems Program (PTSP)	Transportation System Agencies Outside Central Puget Sound that are net contributors of MVET to the PTSA	Planning and Development of Capital Projects, HCT Systems, HOV Lanes and Related Facilities, Other Public Transportation System related Roadway Projects on State Highways, County Roads or City Streets	c) $3.9 million

Rural Arterial Program This fund is for financing arterial road improvements in rural areas. Proposed projects for this program are rated by a specific set of criteria including (1) structural ability to carry loads, (2) capacity to move traffic at reasonable speeds, (3) adequacy of alignment and related geometrics, (4) accident rates and (5) fatal accident rates.

Community Economic Revitalization Board

This fund was established by the legislature to make loans and/or grants for public facilities, including roads, which will stimulate investment and job opportunities, reduce unemployment, and foster economic development.

Public Works Trust Fund

Development to provide low interest loans to local governments for infrastructure improvements and is funded by utility taxes.

LOCAL FUNDING

Local revenue comes from a variety of sources such as property tax for highway projects and sales tax for transit projects. Other revenues include moneys from street use permits, gas tax, utility permits, and impact fees.

Arterial Street Fund

This is the distribution of the state gasoline tax to the cities and counties based on each jurisdiction's population.

Transportation Impact Fees

Transportation impact fees were authorized in HB 2929 of the 1990 Legislature to address the impact of development activity on transportation facilities. Clark County, City of Vancouver the City of Camas and City of Battle Ground have established Transportation Impact Fees programs. Clark County and the City of Vancouver are currently updating their transportation impacts fees programs.

POTENTIAL TRANSPORTATION REVENUES

The revenue sources described in this section are programs approved by the State Legislature which authorize jurisdictions to impose fees at the local level for specific transportation infrastructure categories with voter approval. These programs have not been instituted in this region, but could be imposed in the future.

Local Option Vehicle License Fee

A local option fee of up to $15 per vehicle can be imposed at the county level and can be used for general transportation including: public transportation, high capacity transportation, transportation planning and design, and other transportation related activities. A maximum $15 local license fee could generate up to $4.5 million per year in revenues within Clark County.

Local Option Fuel Tax

A local option fuel tax of up to 10% of the statewide motor vehicle fuel tax may be imposed by the county without voter approval; this would amount to a 2.3 cents per gallon local option. Revenue from this source must be used for highway purposes including: construction and maintenance of city streets, county and state roads, and related activities. This could raise an estimated $3.4 million per year.

Commercial Parking Tax

The county or city may impose, subject to exclusive referendum procedure, a tax on the commercial parking business to be used for general transportation purposes. The tax could be based on gross proceeds or number of stalls, or on the customer. As of yet, there are no localities that have instituted a parking tax, and consequently, issues associated with it have not been analyzed nor have revenue estimates been made.

TRANSIT REVENUES

Revenue sources have been described above that are intended exclusively for highway investment or have the flexibility to be used for highway/transit funding. This section will address revenue sources specifically for the purpose of funding transit needs.

HIGH CAPACITY TRANSPORTATION REVENUES

Federal

The Surface Transportation Program of ISTEA gives much greater emphasis on intermodal flexibility and allows those funds to be used for transit capital projects. In addition, National Highway System funds can be used on alternative arterials or transit projects within the NHS corridor if there is a direct benefit to a NHS facility. Federal funds provided C-TRAN with approximately $12.7 million in 1994.

State

The Transportation Fund of the state can be used for any transportation purpose including transit but historically has primarily been used for highway projects. Within the Transportation Fund is the Public Transportation System Account which may be used for transit-related projects, although the amount available to the remainder of the state outside the Puget Sound area is quite small.

The state High Capacity Transportation Account (HCTA) is available to transit agencies for planning, construction, and operating High Capacity Transportation systems and provides 80% state funding.

LOCAL OPTION REVENUES

There are a number of local option taxes available at the local level that can be implemented with voter approval. Unlike potential revenue sources described earlier, these local tax options would be used exclusively for planning, constructing, and operating high capacity and feeder transportation systems.

Motor Vehicle Excise Tax

Additional local level MVET, to a maximum of 0.8%, is allowed to be levied.

Employer Tax

A tax on employers of up to $2 a month per employee could generate over $2.7 million a year in the Clark County region.

Sales Tax

This would allow up to a 1% local sales tax option and could generate over $20 million a year in revenue.

REVENUES AND COSTS

ISTEA requires that the *MTP* be "fiscally constrained"; there must be a balance between forecast revenues and costs of identified transportation system improvements. With limited revenues available for funding transportation improvements, the most cost-effective transportation solutions must be identified and selected. The analysis of needs and revenues presented in local Growth Management Act (GMA) plans, *1999-2018 State Highway System Plan*, and *Transportation Improvement Program 2000-2002* are used in the *MTP* as the basis for its financial plan. Both the state and local transportation planning processes are required to exercise fiscal responsibility in preparing transportation finance plans. The GMA requires that local jurisdictions prepare a Capital Facilities Plan (CFP) element to include transportation projects as part of the GMA plans.

The financial analysis presented in this MTP assumes revenues and costs in 1999 dollars. This method has advantages in that the methodology is straightforward, but has drawbacks in that inflation is not considered in the analysis. However, the inflation factor has an impact on both the revenues and costs sides of the equation. On the revenues side, gas taxes do not keep pace with inflation. On the project costs side, the longer the time taken to implement a project the more expensive it will be. Another problem that the transportation sector faces is that although the federal government authorizes transportation dollars at a certain level, the actual appropriation for their use is at a lower level.

REVENUES

Historic data relating to revenue receipts for regional transportation improvements is used to assess revenues likely to be received for future transportation needs. The historic data is derived from Transportation Improvement Programs (TIP) for years 1993 through 2002 (TIP years developed since passage of the ISTEA) as a basis for annual revenue estimates. Revenues received for implementing the TIP for years 1993 through 1999 are included in the analysis and revenues programmed in the TIP for years 2000 through 2002.

1999 analysis reveals that once dollars are set aside for regional system maintenance, preservation and operations (approximately $25 million annually) about $27.9 million per year remains available for regional transportation system expansion projects annually in Clark County (See Figure 4-1 below). Over the twenty-year planning horizon of the MTP, this would mean approximately $558.6 million in revenues available for regional transportation system expansion.

As noted above, this revenue projection is exclusive of system maintenance, preservation and operating revenues which are already accounted for, exclusive of local transportation system needs and exclusive of revenues received to fund transit system operations.

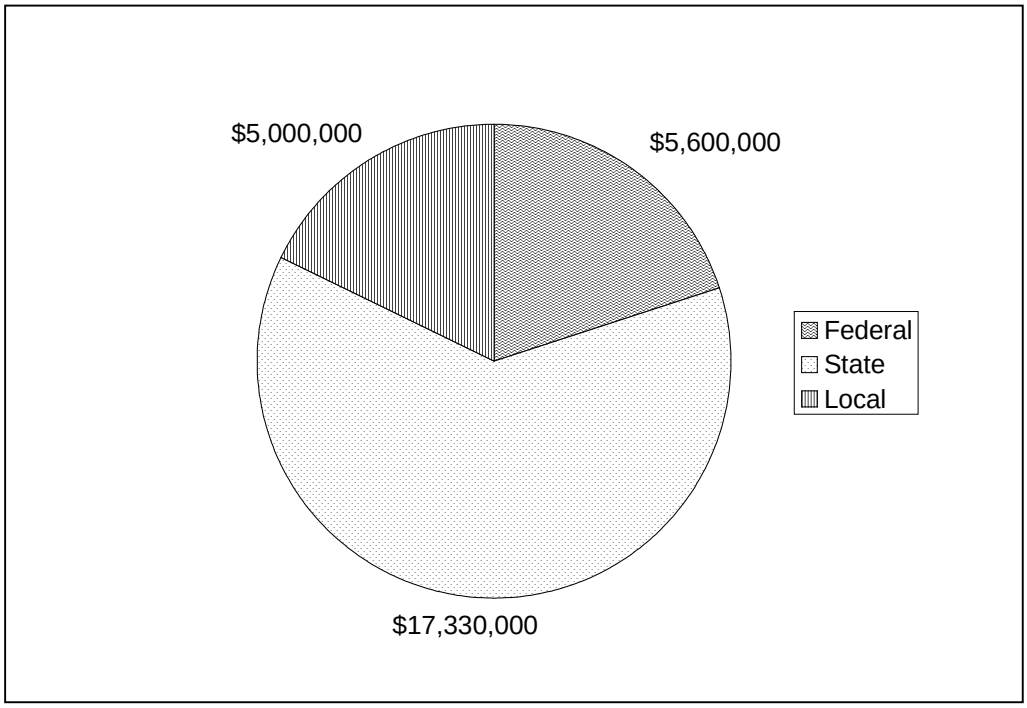


Figure 4-1: Annual Average Revenues for "Mobility/Accessibility" Projects on Regional Transportation System in Clark County

COSTS

System Maintenance, Preservation and Operations

Before consideration can be given to system expansion, the region needs to ensure that sufficient money is available to adequately maintain, preserve and operate the transportation system already in existence. For the regional transportation system, costs to maintain, preserve and operate the system exceed $25 million annually. These costs are likely to take up a greater percentage of available revenues over the twenty year period as the transportation system ages and grows. Transit operating costs are assumed to be covered by available revenues to the transit system. Projected funding for transit system operation and improvement is outlined in the *Model Transit Sub-element and Capital Facilities Plan*, (C-TRAN, May 1994). The document was prepared to support GMA planning efforts. For the six-year planning period, C-TRAN publishes a *Transit Development Plan* (TDP) which reports on projected service levels and funding strategies. The latest published TDP provides a review of 1998 and covers the years 1999 through 2005 and was issued in mid-1999.

System Expansion

In a rapidly growing region such as Clark County, there is large demand for system expansion. MTP highway system expansion costs have been estimated at $558.6[1] million over the twenty-year period. Cost estimates are reviewed in detail at each MTP update.

Estimated capital costs for bi-state transportation facilities is addressed in the October, 1996 report prepared for the Transportation Futures Committee, *New Bi-State Transportation Facilities Capital Cost Comparisons.* The I-5 Trade Corridor Study, now underway, and the Bi-State Transportation Committee which convened in September, 1999 will also address bi-state needs. It is acknowledged in the state 1999-2018 Highway System Plan that a replacement for the I-5 Interstate Bridge will be required in the longer term. However, it is tagged as a High Cost Project (HCP); funding is not identified for the project and so it is not a part of the fiscally constrained Plan.

Consistency Between MTP and State Systems Plan and Local Plans

All recommended projects contained within the MTP are consistent with State and local plans. The *MTP* financial plan is required by the federal government to be "fiscally constrained". The MTP includes all state projects identified in the State Highway System Plan, 199-2018 (January, 1998) Financially Constrained list. However, the State's Highway System Plan identifies transportation needs beyond the revenue levels currently available for regional transportation uses identified in this MTP. The additional transportation needs are listed in the section of the state Highway System Plan titled, "Mobility Strategies Excluded from Constrained Plan". The Highway System Plan estimates that there are $1.3 billion in unmet needs on the state transportation system in Clark County in the twenty year period. The State plan calls for legislative action to increase transportation revenues to overcome the projected shortfall in funding but the outcome is not yet assured. Local GMA plans are dependent on the implementation of various measures to raise additional transportation revenues and, again, the outcome is not certain. It is assumed that funding for *MTP* system improvements already programmed in the regional and local transportation improvement programs is secured.

Fiscal Constraint of the MTP

The MTP for Clark County represents a fiscally-constrained transportation plan in that projected revenues[2] appear to be available to meet the estimated cost of regional transportation projects[3] (in

[1] Cost estimates for the Plan were reviewed in 1999. The cost estimates assume the low end of the cost range for state projects as noted in the 1999-2018 Washington State Highway System Plan (WSDOT; January, 1998). Also, credit is taken for projects which are already fully or partially funded.

[2] A detailed analysis of available and projected revenues and estimated cost of projects is available from RTC.

[3] Regional projects include all state transportation facilities, principal arterials and some minor arterials. Local projects (remainder of the minor arterial system, collectors and local roads) are not included in the MTP's detailed fiscal analysis.

1998/9 dollars) listed in Appendix A. The financial outlook can change if cost estimates for certain projects are increased and/or if projected revenues increase or decrease. The objective of making most efficient use of limited transportation dollars motivated RTC to conduct a transportation project prioritization process during 1998. The rationale for the prioritization process was that if the region could agree on top priorities, medium term priorities and longer term priorities, then the region could advance those top priority projects for statewide competitive funding. It was felt that those projects that have the top priority support of the whole region may be able to more successfully compete for funds. The process focussed largely on prioritization of regional highway capacity expansion projects. These are the type of projects for which dollars are most difficult to obtain because policy is to ensure the maintenance and preservation of the existing system before funds can be allocated to system expansion. The Prioritization Process is outlined in Chapter 5 of the MTP.

The Clark County region does have additional transportation needs beyond those improvements listed in the MTP. Projects to meet these needs cannot be incorporated into the Plan at this time as there are insufficient revenues projected to be available for their construction and/or implementation. Some of these projects are outlined in the 1999-2018 Washington State Highway System Plan and are to be addressed in the next MTP update. During 1998/99 several revenue issues may be resolved which may alter the financial outlook. The federal Transportation Equity Act for the 21st Century (TEA-21) was passed during 1998 which allocates additional funding to transportation projects nationwide than did its predecessor, the Intermodal Surface Transportation Efficiency Act (ISTEA). Referendum 49 was passed by the voters of Washington State in November, 1998 which allocates additional state funds to transportation projects. Balanced against the revenue issues is the issue of cost estimates. Cost estimates may increase as the full extent of work necessary to fulfill certain projects is realized.

CHAPTER 5

SYSTEM IMPROVEMENT AND STRATEGY PLAN

OVERVIEW: DEVELOPMENT OF A BALANCED REGIONAL TRANSPORTATION SYSTEM

This chapter summarizes the solutions and strategies needed to provide an adequate level of regional mobility and accessibility over the next 20 years and to support the Growth Management Act land use goals for the region. A wide range of solutions and strategies are needed to meet regional travel demand. There are strategies to address the travel demand side as well as transportation system supply side, strategies to increase the efficiency of the existing regional transportation system as well as strategies to provide for capacity expansion to accommodate growth, solutions requiring physical construction and solutions requiring planning applications with consideration for multiple transportation modes. In developing a balanced regional transportation system it is not only capacity deficiencies which must be addressed but also preservation and maintenance of the existing regional transportation system, as well as plans to make for a safer regional transportation system for mobility of people and freight. All transportation modes are to be addressed. Development of a balanced regional transportation system with reduced dependence on the single occupant vehicle (SOV) relies on development of alternative modes of transportation, changed land use densities and patterns and/or changes in lifestyle. The chapter concludes with a map showing transportation system capacity expansion improvements included in the MTP and a map showing "Mobility" type improvement priorities.

MAINTENANCE OF THE EXISTING REGIONAL TRANSPORTATION SYSTEM

Of prime importance in the planning for the regional transportation system is the need to maintain the existing system. Maintenance addresses the day-to-day activities needed to keep the transportation system in good working order; daily operations that keep the system safe, clean, reliable and efficient. Such activities include incident response, filling potholes, repairing bridges, drainage ditches, guardrails, plowing snow, removing rocks, and efficiently operating traffic signals. The Washington State Department of Transportation (WSDOT) and local jurisdictions monitor the condition and operation of the existing system and program projects to maintain the system. The *MTP* supports the routine, regularly-scheduled and necessary maintenance work identified by local jurisdictions. The MTP supports maintenance being given high priority in the programming of transportation funds.

PRESERVATION OF THE EXISTING REGIONAL TRANSPORTATION SYSTEM

Preservation of the existing regional transportation system is also important to protect the heavy investments already made in the system. Preservation can prolong the life of the existing transportation system through such projects as repaving roads, rehabilitating bridges, seismic retrofit and rock fall protection. Preservation needs are identified through the Pavement Management System (PMS) and local needs analysis and the MTP is highly supportive of giving prime consideration to such project needs.

BRIDGE DEFICIENCIES

Maintenance and preservation projects required on bridges are identified through the Bridge Management System (BMS) managed by WSDOT. A list of the twenty-year identified bridge needs for Clark County is provided in Appendix B.

SAFETY DEFICIENCIES

Accidents, their number, location, and type, are monitored by WSDOT and local jurisdictions and if there is deemed to be a safety deficiency then remedial measures are considered and corrective action taken. The *MTP* supports regional system safety projects identified through the ISTEA-required Safety Management System (SMS) and local plans and programs to correct safety deficiencies on the regional transportation system. Measures to improve the safety and security of the transit system for transit passengers and employees have been implemented by C-TRAN in keeping with Federal Transit Administration's Strategic Plan.

ECONOMIC DEVELOPMENT AND FREIGHT TRANSPORTATION

The prosperity of a region is dependent on the provision of transportation infrastructure to support economic development. Economic development emerged as the prime evaluation criteria for prioritizing MTP projects in discussions with the RTC Board of Directors (refer to MTP Regional System Improvements and Prioritization Process section later in this Chapter 5). Freight transportation needs have been addressed in a regional freight transportation study undertaken during 1993 to identify regional freight transportation issues and to investigate data availability and needs regarding freight transportation. The results of the study are documented in *Southwest Washington Regional Freight Transportation Study, Final Report* (December, 1993; RTC/JHK & Associates). The study noted the shortage of data relating to freight transportation. The report also noted the need for improved access to the Port of Vancouver via the Mill Plain Extension. There is need for data relating to transportation of freight through the region, freight delivery within the region and freight origins and destinations. A study, commissioned by the Port of Portland to support Metro's Region 2040 planning activities, suggests that freight rail transportation will increase significantly in the region during the MTP planning horizon. The WSDOT-developed Intermodal Management System (IMS) provides input on regional intermodal needs. The community has noted a concern about the transportation of hazardous materials on the transportation system. WSDOT adopted a Statewide Freight and Goods Transportation System (FGTS) in 1995 which categorizes highways and local roads according to the tonnage of freight they carry. The FGTS is currently being updated prior to the 1998 legislative session.

NON-MOTORIZED MODES

The development of pedestrian and bikeway facilities to access the transit system and for use as an alternative transportation mode is supported by the Regional Transportation Plan. Reduced reliance on automobiles is largely dependent on the development of adequate sidewalks and bikeways to access activity centers and to allow for intermodal connections in use of the transit system. The development of non-motorized transportation modes is a strategy which will maximize the capacity of the existing transportation system. Sidewalk and bicycle path/lane projects are most appropriately identified at the local level and can be prioritized through the regional transportation programming

program if in competition for regional funding. Local jurisdictions within Clark County are giving more emphasis than in previous programs to non-motorized projects in efforts to redress the balance in transportation system development from highway and auto dependence to provision of alternative modes. Clark County has convened a Bicycle Advisory Committee to identify and prioritize needed bike projects. In addition, jurisdictions in Clark County have addressed the need for bicycle and pedestrian projects in their GMA plans and in the *Clark County Trails and Bikeway System Plan* (December 1992; Clark County). Notable pedestrian and bicycle projects in Clark County include completion of the City of Vancouver's Columbia River Waterfront Trail, the Discovery Trail, the Columbia River/Evergreen Highway Trail, Hazel Dell Avenue bike lanes and SE 164th Avenue bike lanes. Also of regional significance is improvement of pedestrian and bicycle facilities which will improve access to transit facilities.

TRANSPORTATION DEMAND MANAGEMENT (TDM)

The MTP supports TDM as a strategy to maximize the efficiency of the existing transportation system. Transportation demand management strategies to reduce vehicle trips on the regional transportation system can include use of transit, carpooling, vanpooling, working of flexi-hours and/or compressed work week, and working from home with use of communications technology, known as telecommuting. A list of many TDM strategies is outlined in Table 5-1. Such TDM strategies will become increasingly important as travel demand in the region continues to grow but transportation investments do not keep pace. TDM strategies can help to preserve transportation system capacity and RTC Board direction is to promote the use of such strategies throughout the Clark County region.

Local jurisdictions have implemented the Washington State **Commute Trip Reduction** law and have set in place a program intended to reduce the work trips of employees traveling to and from places of employment with over one hundred employees who arrive at work between the hours of 6 a.m. and 9 a.m. Each of the affected jurisdictions within Clark County have adopted an ordinance to establish the commute trip reduction program. The goal defined in Washington State's commute trip reduction law is to have major employers reduce commute trips by 15% by 1995, 20% by 1997, 25% by 1999 and achieve 35% reduction over the base year by 2005. Currently, there are thirty-six affected employers in Clark County.

A list of potential strategies for implementation in Clark County is contained in Appendix A2 of the MTP; *"MTP Strategies: Projects to Preserve System Capacity, including Transportation Demand Management (TDM) Strategies"*. Monitoring of the effectiveness of TDM is necessary to provide input to the regional travel forecasting modeling process. Prior to the next update of the MTP, a comprehensive analysis of TDM strategies is scheduled.

Table 5-1: Outline of Transportation Demand Management Strategies

Outline of Transportation Demand Management Strategies	
Type	**Description**
Education	Transport agencies, professionals and the public consider and understand TDM
TDM Marketing	Provide public information and encouragement programs
Commute Trip Reduction (CTR)	Employee commute trip reduction programs

Outline of Transportation Demand Management Strategies	
Type	**Description**
Programs	
TMAs	Transportation Management Associations provide trip reduction services in a commercial or employment center
Manage Special Transport Activities	Manage special types of transport and special events for efficiency
Financial Planning	TDM competes against capacity expansion in terms of cost effectiveness
Transportation Allowance	Provide commuter with a transportation allowance rather than free parking
Transit Improvements	Improved public transit service
Park and Ride	Parking at urban-fringe transit stops
Vanpool Programs	Promotion/organization of vanpools
Rideshare Programs	Rideshare promotion and matching
HOV Preference	Transit and rideshare lanes and other priority measures
Free Transit Zones	Free transit in commercial centers
Bicycle Improvements	Improved bicycle planning and facilities
Intermodal Bike	Bike lockers at transit stops, bike racks on transit vehicles
Telecommuting	Working at home to avoid commute trips
Alternative Work Hours	Flex time and alternative work weeks (such as 4 10-hour days)
Guaranteed Ride Home	Provide a limited number of free rides home for transit and rideshare commuters
Security	Address security concerns of rideshare, transit, cycle and pedestrian commuters
Parking Pricing	Charge users directly for parking. Charge by the hour or day rather than the month
Full Cost Pricing	Pricing reforms to encourage efficient transport
Road Pricing	Road tolls and congestion pricing
Mileage Fees	Per-mile charges for road use and/or distance-based vehicle insurance and registration fees
Fuel Taxes	Increase federal and state fuel taxes
Vehicle Restrictions	Prohibit vehicle use in specific areas
Cash Out Parking	Provide employees who do not drive the cash equivalent of parking subsidies
Reduce Parking Requirements	Reduce parking requirements in zoning laws
Preferential Parking	Preferential parking for rideshare vehicles
Vehicle Rentals	Encourage carshare cooperatives and neighborhood vehicle rentals
Land use Reforms	Higher density, mixed use, growth management
Neotraditional Planning	Develop neighborhoods that encourage walking bicycling and transit use
Traffic Calming	Use strategies to reduce vehicle traffic speeds when appropriate
Monitor TDM	Perform surveys and other monitoring of TDM program effectiveness

TRANSPORTATION SYSTEM MANAGEMENT (TSM)

TSM is also a strategy to maximize the efficiency of the existing transportation system. In 1993, a study to investigate the feasibility of various transportation system management strategies was conducted by ODOT. The ODOT Advanced Transportation Management System (ATMS) study was coordinated with WSDOT and included analysis of traffic surveillance, traffic control and traveler information needs in the I-5, I-205, SR-14 and SR-500 corridors. TSM measures can include an incident response program, increased signage to alert motorists of travel conditions, ramp metering, improved communication means, Intelligent Vehicle/Highway System (IVHS) projects, channelization of traffic at intersections and traffic signal interconnects to improve the efficiency of operation of the regional transportation system. The need for ramp metering on some of the interchange ramps, with greatest need in the I-5 corridor, has been identified in the WSDOT Systems Plan component of the *Statewide Multimodal Transportation Plan*.

TRANSIT

Transit system improvements are supported in the MTP. The transit transportation mode supports the land use goals established in the GMA Plans which envision denser developments in growth centers and in primary transportation corridors. Transit is also important in meeting the mobility needs of the transit dependent; those unable to drive automobiles because of age, infirmity, disability or low income. C-TRAN outlines a program for development of the transit system in their publication *C-TRAN Transit Development Plan 1996-2001* (C-TRAN, February 1996) which the *MTP* supports. Future development of the transit system will be shaped by the outcome of high capacity transit studies currently ongoing in the region and by land uses established in the Growth Management Plans of local jurisdictions. C-TRAN relies on its Level of Service Indicators matrix (see figure 3-15, Chapter 3) in determining the feasibility of transit service expansion. C-TRAN also outlines plans for future transit service in its publication, *C-TRAN Model Transit Sub-Element and Capital Facilities Plan* (C-TRAN, May 1994, Revised). Over the 20-year planning period an increase in annual transit service hours is forecast from the existing 288,000 hours up to over 440,000 service hours. To reinforce the success of transit system expansion, local jurisdictions need to address transit supportive urban design in providing for convenient access to the transit system.

WELFARE TO WORK

Transportation is one of the main challenges facing people making the transition from welfare to work. In support of that transition, the U.S. Department of Transportation in cooperation in other federal social service agencies is encouraging communities to plan and implement seamless and integrated transportation systems and services which address the numerous welfare to work transportation challenges.

C-TRAN has taken the lead among transportation providers in coordinating with the region's social service providers (DSHS, PIC, HSC) to develop a regional welfare to work transportation plan and pursue program grant funding. Program elements of the welfare to work transportation plan may include: supporting and developing services such as connector services to mass transit; vanpools; sharing buses with elderly and youth programs; coordinated human services and public transit transportation resources; employer provided transportation; Geographic Information System (GIS) based ride matching; guaranteed ride home programs; and public-private transportation partnerships. Some of these programs currently exist, and the outcome of the welfare to work plan will encourage

coordinating the services into a seamless system to address the transportation problems for the region's welfare recipients and other low income persons.

HIGH CAPACITY TRANSPORTATION (HCT)

The development of HCT is supported in the MTP to increase the transit carrying capacity of principal transit routes as a strategy to avoid having to provide increased highway capacity (refer to Transportation Management Areas (TMA's) and Congestion Management System (CMS) section below). Study of high capacity transit options were advanced in the South/North High Capacity Transit Corridor Study. A *Tier I Recommendation Report*, published by Metro, September 14, 1994, recommended that Light Rail Transit be developed in the I-5 corridor to Clark County with Phase I terminating in the vicinity of NE 99th Street and Phase II terminating in the vicinity of NE 134th Street. On the designated regional transportation system, (see Figure 3-3, *Regional Transportation System*) the I-5 corridor is designated a LRT corridor from the state line to the vicinity of Clark College and as a HCT corridor north to 134th Street, SR-500 (between I-5 and Orchards) is marked for potential future HCT extension and the I-205 corridor is designated as a potential future High Occupancy Vehicle/Busway corridor. On July 19, 1994, Metro released the *South North Transit Corridor Study, Draft Briefing Document, Tier I Technical Summary Report* to support the South/North HCT Corridor study recommendations. In 1995 the Clark County voters voted no to funding LRT development. A Draft Environmental Impact Statement (DEIS) was prepared through a coordinated process led by Metro, Portland with a northern terminus in the vicinity of Clark College. The purpose of the DEIS is to identify and disclose anticipated impacts of a potential light rail line from the Clackamas Town Center area to Clark County compared to a "No-build" alternative. Alternatives and options were described in detail in the *South/North Corridor Project Draft Environmental Impact Statement* (FTA/Metro, February 1998). Plans are now moving forward to terminate an LRT line at Expo Center in Oregon. A *South/North Corridor Project Supplemental Draft Environmental Impact Statement* was issued by FTA/Metro in April, 1999.

COMMUTER RAIL/RAIL CAPACITY ISSUES

RTC has recently completed the Commuter Rail Feasibility Study (RTC, May 1999). The purpose of the study was to determine if commuter rail has the potential to serve as a low cost option to improve bi-state travel mobility by making more effective use of the existing Burlington Northern Santa Fe rail transportation corridor between Vancouver and Portland. Commuter rail provides passenger service by shared use of rail tracks with freight operators and other rail users. The Study examined critical issues in the implementation of commuter rail and included: schedule reliability, operations, the impact of shared use with freight and inter city passenger needs, capital and operating costs, and ridership.

The Study concluded that, in a five year horizon, moderate levels of commuter rail service could be implemented between Vancouver and Portland with minor rail capacity improvements. By 2013, however, any level of commuter rail service would require a dedicated passenger track to accommodate the commuter service and the expected increases in freight and intercity passenger trains. The findings of this feasibility study indicate that a commuter rail system should not be pursued at this time unless it is determined that a major rail investment necessary to support future intercity passenger and freight rail growth in the corridor were to be made. Then, the concept of a commuter rail service should be revisited.

This rail corridor is severely constrained in terms of how much growth it can support without major capital investment. The commuter rail operations added a relatively small number of trips to the system but enough to trigger the requirement for a dedicated passenger alignment,. Current plans for intercity passenger and freight growth could trigger the need for major capacity improvements before the 2018 horizon year. The results of this Study have created the awareness of the need to initiate regional discussion about long-term rail capacity issues affecting freight and passenger needs. The capacity constraints in this corridor need to be discussed further, not only in the context of the commuter rail system concept, but also as they relate to the rapid growth of rail freight traffic in the corridor and plans for greatly increased intercity passenger service.

TRANSPORTATION MANAGEMENT AREAS (TMA'S)

The Clark County region has been designated as a Transportation Management Area under ISTEA and TEA-21 because the region has a population greater than 200,000. In addition to meeting all the specified metropolitan transportation planning process requirements, MPO's representing Transportation Management Areas must meet additional requirements. In TMAs, the MPO must have a **Congestion Management System** that provides for the effective management of new and existing facilities through the use of travel demand reduction and operational management strategies. In TMAs, such as the Clark County region, which have been classified as non-attainment for ozone and/or carbon monoxide, highway capacity expansion projects that result in a significant increase in single occupancy vehicles can only be programmed if consistent with the Congestion Management System. The CMS acts as the process for identifying deficient regional travel corridors, for evaluating non-SOV alternatives to address congestion, and for managing the performance of the system.

CONGESTION MANAGEMENT SYSTEM (CMS)

The Congestion Management System (CMS) for Clark County was developed and operational by the deadline of October 1, 1995. The CMS identifies projects and programs for consideration in the metropolitan planning process. In November 1993, RTC released the *Intermodal Surface Transportation Efficiency Act, Transportation Management Systems for: Traffic Congestion, Public Transportation Facilities and Equipment, Intermodal Transportation Facilities and System, Phase I, Final Report.* In October 1994, the *CMS Phase I Compliance Statement and Work Plan* was issued. Elements of the CMS include the identified CMS network performance measures and data monitoring plan as described in the two reports mentioned above. The CMS network is a sub-set of the regional transportation system; a set of 21 transportation corridors to be monitored and evaluated on an ongoing basis as part of the CMS. The *Southwest Washington ISTEA Transportation Management Systems, Phase II Final Report*, which contains the CMS, was adopted by the RTC Board on May 2, 1995 (RTC Board Resolution 05-95-14).

The CMS is intended to be an evaluation tool for monitoring traffic congestion and for identifying improvement strategies. The CMS allows for the systematic monitoring of performance, identification of deficiencies, and the evaluation and recommendation of strategies. The evaluation becomes one part of MTP development. Consequently, the CMS process should be conducted on a cycle consistent with the MTP. However, performance of the CMS network is monitored on a more regular basis as new traffic volume data is available.

The CMS identifies a set of strategies that address regional congestion problems for consideration within the MTP process. As part of this process, the CMS strategies are weighed against other MTP goals and objectives. The recommendation of a strategy within the CMS to manage traffic congestion does not mean automatic implementation and incorporation into the MTP. It is recognized that selecting project priorities involves the consideration of many factors, of which congestion relief is just one.

AIR QUALITY CONSIDERATIONS

The Southwest Washington Air Pollution Control Authority (SWAPCA) has developed, as supplements to the State Implementation Plan, two Maintenance Plans; 1) for Carbon Monoxide (CO), and 2) for Ozone (O_3). In October, 1996 the CO Maintenance Plan and in April 1997 the Ozone Maintenance Plan were approved by the Environmental Protection Agency (EPA). Mobile source strategies contained in the Maintenance Plans were endorsed for implementation by the RTC Board of Directors (Resolution 02-96-04). Prior to this the Vancouver region was classified as a 'moderate' nonattainment area for carbon monoxide air pollutants and a 'marginal' nonattainment area for ozone. Mobile emissions are a significant source of the region's air quality problems. As a result, transportation planning and project programming cannot occur without consideration for air quality impacts.

Mobile source emissions can be minimized through increased use of non-motorized transportation modes, through increased transit use, through transportation systems management measures (such as inter-connecting traffic signals and enhanced timing of signals) and travel demand management techniques (such as work flex-time, parking charges, carpooling and vanpooling programs); all supported by the MTP. Mobile emissions can also be reduced through technology-based transportation command and control measures, such as enhanced emissions testing (I/M) programs, expansion of I/M and fuel requirements. These types of strategies are called transportation control measures (TCM's).

RTC worked with Washington State Department of Ecology (DOE) on development of methodology for mobile source emissions analysis and used the regional travel model data to develop mobile source emissions inventories. Transportation strategies identified in the SIP for the Vancouver Air Quality Maintenance Area include:

- expanded transit service
- an emissions testing (I/M) program for the area of Clark County within the Air Quality Maintenance Area (AQMA).

These strategies are implemented in efforts to maintain National Ambient Air Quality Standards (NAAQS).

In the Maintenance Plans an emissions "budget" is established for all sources of emissions that are not to be exceeded. In order to demonstrate that emissions stay within the budget during the maintenance period, the Maintenance Plans identify emission transportation control measures for all sources and these must be implemented during the ten-year period. The range of strategies in the Maintenance Plan includes transportation control measures to limit mobile source emissions. If the

budget is exceeded, additional contingency control measures must be implemented to lessen the emissions.

Both the MTP and TIP undergo air quality conformity analysis before they are adopted. Projects can only be programmed in the TIP if they come from a conforming *MTP*. A determination of conformity of the *Metropolitan Transportation Plan* with the federal Clean Air Act, as amended in 1990, and the Washington Clean Air Act can be found in Appendix A of this document. Conformity with the Clean Air Act is also addressed in the metropolitan Transportation Improvement Program for the Clark County region. At the project level, non-exempt transportation projects have to undergo conformity analysis to show they meet federal and state air quality standards before completion of the design phase.

MTP REGIONAL SYSTEM IMPROVEMENTS AND PRIORITIZATION PROCESS

Federal and state legislation, together with citizen input, has prompted the identification and implementation of alternative transportation solutions. Alternative solutions provide a way to avoid increasing capacity of the highway system through road widening projects. The MTP provides for strategies and solutions to meet regional travel demand and to develop a balanced regional transportation system over the 20-year planning period. Figure 5-1 is a map showing identified improvements on the regional transportation system. The map shows the location of necessary highway capacity expansion projects. Transit expansion is marked on Figure 3-3, *Designated Regional Transportation System,* in Chapter 3. Appendix A provides a listing of needed improvements, both on and off the regional transportation system, which have been assumed in the regional travel forecasting model process for MTP development and its accompanying air quality conformity analysis. The list focuses on system expansion projects for it is these that are most readily incorporated into the regional travel forecasting model and their impacts measured. The appendix also outlines the wide array of transportation system improvements which will contribute to the development of a balanced regional transportation system. Even with the extensive list of transportation improvements, increased congestion can be expected on Clark County's transportation system by the year 2020. In many of the transportation corridors, further system expansion through widening of existing highways will not be feasible. Therefore, it is imperative that this region continue to develop a more balanced transportation system to encourage use of alternative transportation modes to the Single Occupant Vehicle.

Following adoption of the MTP for Clark County in December 1997, a prioritization process was initiated as a result of concerns that funding for transportation "mobility" improvements is limited compared with growing needs. The process is described in the RTC technical report, *Metropolitan Transportation Plan for Clark County, Prioritization of MTP Projects (RTC, October, 1998. RTC Board Resolution 10-98-16).* A prioritization process helps the region to make most effective use of limited transportation funding to meet transportation system improvement needs.

"Mobility" type improvements became the focus of the prioritization process when it was realized that such projects are the ones the region finds increasingly difficult to fund after maintenance, preservation and safety needs are taken care of. In a rapidly growing, urbanizing region such as Clark County there is need for significant investment in "mobility" projects to complete the arterial street system and to improve the design standard of facilities to cope with urban traffic levels. It is recognized that Transportation System Management and Transportation Demand Management strategies can contribute toward system capacity preservation and are considered in the prioritization

process (refer to Appendix A2 of the MTP; *"MTP Strategies: Projects to Preserve System Capacity, including Transportation Demand Management (TDM) Strategies"*. It is acknowledged that all of the projects evaluated in the MTP prioritization process, and probably more, are needed within the 20-year horizon of the Plan to attain reasonable transportation system performance. However, with limited funding availability, it is prudent to reach regional consensus on the highest priorities.

The prioritization process takes a strategic systems approach to determine transportation needs. Steps in the process for prioritization of regional transportation projects include 1) Development of a shared understanding of transportation system needs through review of existing and future transportation system performance, 2) Review major transportation policies governing regional transportation system development, 3) Agree on key policy principles for project prioritization, 4) Establish criteria for project evaluation, 5) Initial evaluation of projects based on criteria. (existing growth management land use plans, growth forecasts and results from the regional travel forecasting model are used as the basis for needs evaluation), 6) Re-evaluate projects (based on iterative performance analysis), 7) Consider project staging, finance and priority level, and 8) Recommendation of MTP regional priority transportation projects.

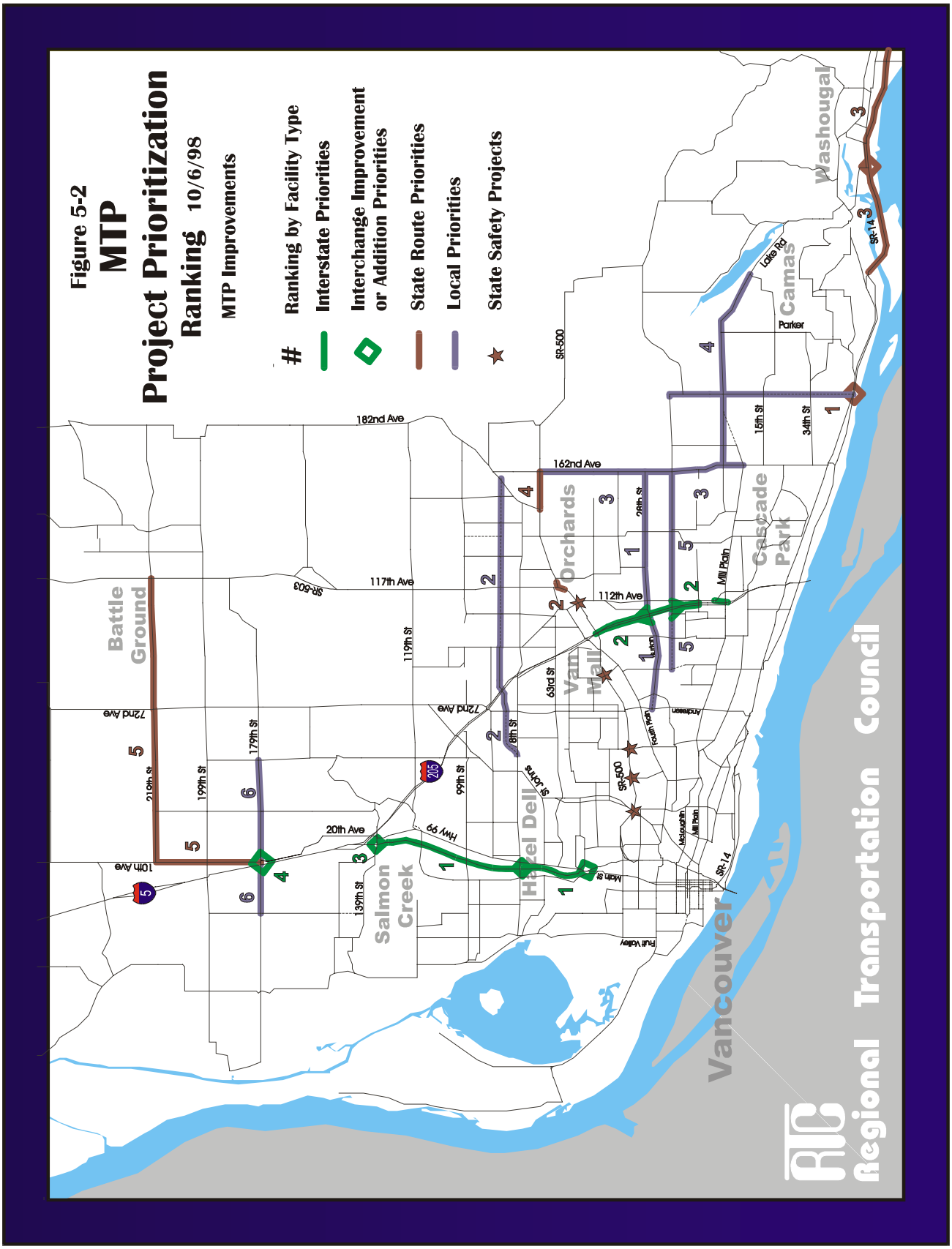
The following key policy issues emerged as the most important to emphasize in terms of project prioritization: 1) Economic Development, 2) Land Use and Transportation System Performance, 3) Transportation Demand Management (TDM*), 4)* Funding and 5) Bi-state Transportation Strategy. Economic development emerged as the prime criteria for project prioritization.

Project evaluation criteria, quantified results of project evaluation and the adopted project ranking is outlined in the matrix "*MTP Mobility Project Prioritization: Project Ranking, Quantitative Analysis of Policy Directives and Evaluation Criteria, October 6, 1998"* (see Appendix A1 of MTP). The projects considered in the prioritization process and their ranking, by interstate, state and local highway, are depicted on the map, Figure 5-2, of this chapter; *"MTP Project Prioritization Ranking"*. When selecting transportation projects for funding, consideration should be given to transportation projects which support community goals e.g. development of higher educational facilities in Clark County.

The project prioritization process is dynamic and project priorities will be reviewed with each MTP update to consider emerging trends and results and recommendations from ongoing transportation studies. Recent and ongoing studies are listed at the back of the MTP. The list of highest priority projects will not constitute the final determination to actually fund the projects. The funding and phasing decisions are carried out during the Transportation Improvement Program (TIP) development process. Transportation improvements require programming of funding which is carried out in the Transportation Improvement Program (TIP) for the metropolitan area. It is in the regional TIP that federal funds are programmed. Projects which use local funding are programmed in the local Transportation Improvement Programs, developed each year by individual local jurisdictions.

Figure 5-1: MTP Regional System Improvements

Figure 5-2: MTP Project Prioritization Ranking



The Transportation Futures Committee

Throughout 1995 and 1996 the citizens' Transportation Futures Committee met to consider transportation issues, system improvement needs and strategies in the Clark County region. There follows a quite extensive description of the work of the Transportation Futures Committee as their work and broader community outreach is very significant to the future development of the Clark County transportation system.

The work of the Transportation Futures Committee and its findings is fully documented in the *Transportation Futures Committee Report*.

TRANSPORTATION FUTURES COMMITTEE: PURPOSE

The Transportation Futures Committee's purpose was to provide elected officials with a set of citizen findings that can be considered as transportation plans and programs are developed.

The work scope of the Committee was to:

- Review the community's transportation goals to be achieved by the transportation system in-light of the adopted land use and transportation plans.
- Identify transportation policies for internal Clark County mobility, transit utilization, traffic congestion, freight movement, pedestrian/bike access, bi-state mobility and financing options that best match the vision for the transportation system.
- Measure a range of proposed transportation options by comparing the Committee's findings with the community's transportation goals.
- Identify the ways to engage the larger community in the discussion of future transportation issues and options.
- Report the findings of the Transportation Futures Committee to the community at large and to the Board of County Commissioners and Vancouver City Council.

The work included a review of previous study information and the development of new information, where necessary, to understand the facts and develop findings for the following:

- The role of alternatives to single occupancy vehicle travel and strategies to reduce peak hour travel demand such as: carpooling, telecommuting, staggered shifts, local job creation, technology, and others.
- Clark County's current arterial system and determine what can done to improve it and utilize it for alternative travel modes.
- The role of public transit as a component of the transportation systems in our community and the function of how mobility needs for urban, rural, bi-state transit service are best met.
- Bi-state travel demand between Clark County and Oregon and the best way to provide for the mobility for people and goods as the region continues to grow, including assessing bi-state improvement concepts such as a new highway corridor and bridge, I-5 and I-205 LRT, expansion of the I-5 corridor, and others.
- The current state of transportation financing and the most equitable approach for maintaining current funding levels or seeking new funding.

TRANSPORTATION FUTURES COMMITTEE: VISION

The TFC developed a 20-year vision which provided an approach to assess transportation options and lay the groundwork for identifying problems and constraints to achieving the vision. The Vision is described below:

> *To promote regional mobility of people and goods, Clark County will have a comprehensive transportation system accountable to the public that:*
>
> - *Provides choices and alternatives*
> - *Enhances quality of life*
>
> *And is:*
>
> - *Socially, environmentally and economically responsible*
> - *Efficient*
> - *Responsive*
> - *Linked to land use*
> - *Safe, and*
> - *Accessible to all.*

TRANSPORTATION FUTURES COMMITTEE: FINDINGS

The Committee feel that these findings will best attain the vision and solve or address transportation issues and problems identified by the Committee.

1. OVERALL

The Transportation Futures Committee finds that current and past land use and transportation planning and funding have encouraged use of the auto to the detriment of alternative modes of transportation, such as public transit, bicycle and pedestrian travel. The Committee recommends adjusting this imbalance by supporting a balanced approach to improvements, including public mass transit, bicycle, and pedestrian facilities and roads.

2. POLICIES

The Committee finds that land use decisions should not only be supported by transportation planning, but should encourage more responsible neighborhood development that supports multiple transportation alternatives. Techniques to achieve this goal include:

- Allow for appropriate commercial development in predominantly residential neighborhoods
- Reduce or eliminate minimum parking requirements in favor of maximum requirements
- Provide significant incentives for businesses to reduce parking needs and improve access for pedestrians, bicyclists and buses

The Committee finds that local government should include capacity for public mass transit and other alternative modes in overall road capacity when meeting concurrency requirements.

To reduce commuting trips, the Committee supports incentives for citizens and the private sector and requirements for government to encourage the following:

- Telecommuting
- Altered work hours (flex-time or staggered work hours)
- Ride-sharing

The Committee endorses sufficient funding for maintenance and necessary expansion of our existing road system.

The Committee strongly encourages consistent regular coordination between public and private entities engaged in transportation planning and construction.

3. INTERNAL CLARK COUNTY TRANSPORTATION SYSTEM

The Committee favors a multimodal approach (i.e., roads, bicycle, pedestrian and public mass transit facilities) to address current and future transportation problems.

The Committee finds that a grid system improves links between neighborhoods, helps decentralize traffic throughout the road system, improves access for emergency vehicles, and fosters use of alternative means of travel (such as public mass transit, bicycling and walking).

- For new development, a grid system should be encouraged or required.
- For existing development, property owners should be encouraged to provide easements for bicycle or pedestrian paths or roads that increase transportation connections.

The Committee finds that the following facilities and techniques will help attain the vision. (Not in order of priority)

- High Occupancy Vehicle lanes
- Neighborhood traffic calming strategies
- Signalization/timing improvements
- Ramp metering
- Safety improvements
- Complete network of sidewalks

The Committee encourages local government to develop and implement a rating system for the quality and safety of non-vehicular transportation facilities.

4. PUBLIC MASS TRANSIT OPTIONS

The Committee finds that public mass transit is an integral component of a multimodal transportation system that provides alternatives to driving alone.

The Committee finds that current transit service should be more flexible and efficient. Some commercial or residential areas developed at urban densities are not adequately served. In other cases, existing service to more rural areas is not cost-effective and may not be desired by area residents. Consideration should be given to decreasing service in such areas to increase coverage and frequency in urban areas.

The Committee finds that public mass transit service provides a social service function by enhancing mobility for those who are unable to use a private automobile or other means of transport. The community should continue to be committed to providing public transit service to ensure mobility for all.

The Committee finds that paratransit service should be made available for the entire area within the Clark County/transit service boundary to improve mobility for all qualified citizens in the community.

The Committee recommends the following:

- Investigate serving middle and high school students with C-TRAN service instead of the current separate school bus system to reduce overall transportation costs and improve efficiency.
- Encourage private transit service while protecting the public utility aspect of C-TRAN.

The Committee also supports continued investigation of:

- Additional express routes
- Increased service between activity centers
- Use of smaller vehicles for feeder service
- Fareless areas

5. BI-STATE TRANSPORTATION FACILITIES

The Committee supports a balanced approach to bi-state transportation issues, focusing on:

- Reducing demand for new transportation facilities and improvements in the long-term, by:
  - Encouraging economic development that supports family wage jobs in Clark County and reduces the need to commute to Oregon.
  - Promoting the use of alternative modes of transportation to driving alone (e.g. public transit, carpooling, bicycling, altered work hours and telecommuting)
- Increasing capacity to accommodate long-term population growth and continued need for bi-state transportation facilities, with first priority on the I-5 corridor. Making more effective use of existing facilities is a high priority in this order of preference.
  1) Improved and/or expanded bus service
  2) High Occupancy Vehicle lanes (using existing facilities wherever possible)
  3) Commuter rail
  4) Light rail
  5) Reversible lanes
  6) Widening I-5 (highway and bridge) for general purpose traffic
  7) Ferry system

The Committee finds that a third auto bridge and highway corridor is not an acceptable solution to bi-state congestion.

The Committee finds that reducing automobile congestion and demand will free up capacity for freight highway needs. In addition, the Committee supports the practice of "piggybacking" (transporting truck containers by rail) as well as improved rail/truck/port connections (also referred to as multi-modal freight facilities).

The Committee urges local, state, and federal officials to actively represent the needs of Clark Commuters to Oregon.

6. LOCAL FINANCING

The Committee finds that the following transportation financing principles will best attain the Committee's vision:

- The cost to the user of a transportation alternative, whether collected at the point of use or through taxation, should increase in proportion to use consistent with encouraging alternatives that minimize impacts on the environment and resource consumption.
- Funding for transportation alternatives that minimize impacts on the environment and resource consumption should be encouraged.
- Financing mechanisms that retain local money (i.e., taxes and fees) within Clark County and provide for local options should be favored.
- Public awareness of the true or full costs of transportation alternatives should be enhanced.

The Committee supports the following financing options, in order of preference:

1) Sales tax on motor vehicle fuel coupled with a reduction in motor vehicle excise taxes (MVET)
2) Local option gas tax and local option sales tax
3) State funds reallocated for alternative modes
4) Mileage-based fees
5) Tolls
6) Impact fees

The general public was given opportunities to comment on the findings of the TFC. An extensive survey of public opinion regarding the TFC findings was carried out and is reported on in the *Transportation Futures Committee Report*.

CHAPTER 6

PERFORMANCE MONITORING

The transportation planning process requires that monitoring of system performance takes place. Several elements of system monitoring activities are described below.

GMA AND CONCURRENCY MANAGEMENT

Monitoring of the regional transportation system's performance is an ongoing activity for RTC. The GMA-required Concurrency Management System necessitates monitoring of transportation system performance to measure its performance against established Level of Service standards. Requests for future development have to be considered in light of the established Levels of Service for transportation facilities. If Level of Service standards cannot be met, then development can be halted or mitigation measures required. Concurrency management necessitates not only monitoring of transportation system performance but also requires tracking of development in the region and update of transportation modeling tools to ensure accuracy of data.

REGIONAL TRAVEL FORECASTING MODEL

RTC uses a regional travel forecasting model to forecast future transportation needs. Performance measures, in terms of speed, vehicle miles traveled, lane miles of congestion and vehicle hours of delay are calculated within the model. The performance measures were reported on in Chapter 3 (Tables 3-11 through 3-14).

ISTEA CONGESTION MANAGEMENT SYSTEM

ISTEA required the development of a Congestion Management System (CMS) which is used as a tool for monitoring traffic congestion and for identifying improvement strategies to alleviate the congestion. The *Southwest Washington ISTEA Transportation Management Systems, Phase II Final Report* (May 1995), which contains the CMS, was adopted by the RTC Board on May 2, 1995 (RTC Board Resolution 05-95-14). The CMS network is a sub-set of the regional transportation system; a set of 21 transportation corridors to be monitored and evaluated on an ongoing basis as part of the CMS. In 1998/99, as part of the ongoing monitoring process, Corridor Congestion Ratio (CCR) numbers were updated. Traffic count data obtained in 1998, as part of the Congestion Management Monitoring program, were used to update the ratio. The following corridors have been classified as tier III with congestion ratio of 0.7 or greater.

<u>1.0 or Greater</u>

- I-205 South, between State line and SR-500 (including I-205, 112th Avenue/Chkalov Drive)
- SR-500/Fourth Plain, Andresen Road to SR-503

<u>0.90 to 0.99</u>

- I-5 South, between State line and Main Street (including I-5 and Main Street)
- SR-502, I-5 to SR-503
- SR-500 East, SR-503 to 162nd Avenue

0.80 to 0.89

- I-5 Central, between Main Street and I-205 (including I-5, Hazel Dell Avenue, and Highway 99)
- SR-500 West, I-5 to Andresen Road
- SR-503, Fourth Plain to 119th Street
- SR-14 West, I-5 to 164th Avenue
- NE 134th Street, NW 36th Avenue to WSU entrance
- NE 28th/NE 18th Street, Andresen to NE 162nd Avenue

0.70 to 0.79

- I-205 Central, between SR-500 and I-5
- Mill Plain, I-5 to 164th Avenue
- SR-14 East, 164th Avenue to east Clark County line
- Ward Road, SR-500 to 119th Street
- 78th/76th Street, I-5 to SR-503
- Andresen Road, SR-500 to Mill Plain

During 1999 ongoing monitoring activities have included gathering of updated traffic count data, and will include vehicle occupancy survey, travel time survey and survey of C-TRAN ridership by line. An updated Congestion Management report is due for publication in winter 1999/2000.

AIR QUALITY MONITORING

Monitoring of air quality standards is an ongoing activity in the Air Quality Maintenance Area for the region. This relates directly to the transportation system and its performance because mobile source emissions are a large contributor to air pollution. The Air Quality Maintenance Plans for carbon monoxide and ozone include emissions budgets which have to be met to ensure that air quality standards are attained and maintained.

COMMUTE TRIP REDUCTION (CTR) LAW IMPLEMENTATION

Washington law established a goal of achieving 15% work trip reduction by the year 1995, 20% reduction by the year 1997, 25% reduction by the year 1999 and 35% by 2005. All jurisdictions in Clark County with affected employers of over 100 employees who meet the set criteria have adopted CTR ordinances and employers have established commute trip reduction programs. Monitoring of the success of these programs is carried out to ensure that the goals are being met.

CHAPTER 7

PLAN DEVELOPMENT AND IMPLEMENTATION

PUBLIC INVOLVEMENT IN METROPOLITAN TRANSPORTATION PLANNING PROCESS

RTC has an adopted public involvement program, outlining the public involvement efforts in the development of regional transportation plans and programs. Copies of the public involvement program are available at the Fort Vancouver Library and at RTC offices for public review. All RTC Board meetings and technical committee meetings are open to the public. Public involvement efforts build from those carried out at the local level in development of local plans and programming of transportation projects. In 1996, RTC staff was involved in extensive public involvement efforts through the Transportation Futures Committee. RTC is represented at numerous public meetings regarding regional transportation issues. These meetings include the transit Special Services Advisory Committee (SSAC), the Padden Task Force, the Community Design Team for the Orchards Community Plan; Fourth Plain Boulevard, representation at Clark County Transportation Improvement Program Involvement Team (TIPIT) Committee meetings, the Greater Vancouver Chamber of Commerce Transportation Sub-committee activities, InterAct and meetings of the Choices 2010 group. A Bi-state Transportation Issues open house was held on March 26, 1998 at the Vancouver Marketplace. The open house provided an opportunity to present the MTP and its recommendations for regional transportation development. RTC convened a HOV Citizens Stakeholders Committee in 1998 to assist in developing the "Clark County High Occupancy Vehicle Study". Through the coordinated efforts of RTC and WSDOT a public information booth on regional transportation issues is set up each year at the Clark County Fair. The Fair is attended by over 300,000 people and staff at the transportation booth solicit comments from the Fair attendees and the public can fill in survey forms about the region's transportation system. Staff manned the booth to answer questions from the public and to receive comments on the TIP and the MTP. In September, prior to the adoption of the 1999-2001 Metropolitan Transportation Improvement Program, a public meeting was held to give the public opportunity to comment on the program of regionally selected and prioritized projects to be presented for federal funding during the forthcoming three year period as well as opportunity to learn about MTP development.

A formal public meeting is held before *MTP* adoption and, at a minimum, an annual public meeting is held to allow the public to review the status of *Plan* development. Updates and amendments to the MTP are presented to the RTC Board for the Board's consideration and adoption. All meetings of the RTC Board are open to the public.

MTP IMPLEMENTATION

Implementation of regional transportation goals, policies and actions established by the *MTP* are carried forward through the regional decision-making process which takes place in development of the regional **TRANSPORTATION IMPROVEMENT PROGRAM (TIP).** It is in the TIP that transportation needs identified in the *MTP* can be programmed for receipt of federal funding.

MTP UPDATE PROCESS

Under the GMA, the *MTP* is to be reviewed for currency every two years. Updates are required at least every three years by federal agencies and the Plan is required to have at least a twenty-year horizon. Should changing policies, financial conditions or growth patterns warrant, *Plan* amendments can take place, subject to findings of air quality conformity and subject to a public involvement process.

The 1998 MTP amendment focused on changes to Chapter 4 (Financial Plan) and Chapter 5 (System Improvement and Strategy Plan). The language in the Chapter 4 Financial Plan was amended to make clear that the Plan is fiscally constrained. Only projects from a fiscally constrained Plan can be included in the air quality conformity analysis. In turn, only projects from air quality conforming plans can be advanced for programming of funds in the Transportation Improvement Program. The description of funding programs in Chapter 4 was also updated to reflect the new funding levels in the federal Transportation Equity Act for the 21st Century (TEA-21) and recent funding history for state Transportation Improvement Board (TIB) programs. Chapter 5 was amended to include description and recommendations of the MTP Prioritization Process carried out during 1998. The 1998 amendments did not change the identified projects listed in Appendix A of the MTP. Therefore the air quality conformity analysis carried out on the December 1997 version of the MTP (documented in Appendix A of the Plan) remained valid.

A minor amendment in April, 1999 incorporated plans for a new interchange at I-5 and NE 219th Street into the MTP. This 1999 MTP update addresses the need to keep the MTP up-to-date with developments in the planning of transportation facilities and services. The focus of the MTP update is to extend the horizon year of the Plan to 2020, thereby meeting federal requirements to have a Plan with at least a twenty year horizon. Demographic data is updated to the 2020 horizon year, a revised regional travel forecasting model is prepared, transportation deficiencies considered, the list of transportation needs and projects revised, the financial plan reviewed and updated and an update to the air quality conformity analysis prepared.

The issue of cross-Columbia travel continues to be the subject of bi-state transportation efforts. The feasibility and utility of High Occupancy Vehicle (HOV) treatments in Clark County was studied during 1998 which culminated in the publication of “Clark County High Occupancy Vehicle Study” (December, 1998). The 1998 Study defined HOV policies and objectives, identified HOV need and benefits and identified the location of possible HOV corridors and/or facilities. A study of the operational feasibility of an I-5 HOV lane is now underway. A report on commuter rail as a cross-river travel option was published in May, 1999. A Bi-State Transportation Committee has recently convened and the I-5 Trade Corridor Study is underway. Results and recommendations from studies underway will be incorporated in a future MTP update or amendment.

APPENDIX A

TRANSPORTATION CAPACITY IMPROVEMENTS ASSUMED IN MTP NETWORK AND AIR QUALITY ANALYSIS

Between 1999 and 2020 Clark County jurisdictions have planned for transportation improvements in locations with existing or forecast future capacity problems. These anticipated improvements were taken into consideration in carrying out the Metropolitan Transportation Plan needs and **air quality analysis**.

The **MTP** transportation system is the existing transportation network with improvements made on those links where projects are programmed in the Transportation Improvement Program. In addition, improvement projects are included where regional need has been identified in the MTP development process and for which there is strong regional commitment. Projects included in the MTP transportation system may eventually be programmed for funding by federal, state, Transportation Improvement Account (TIA) and/or local sources.

Assignment of forecast future year trips onto the *MTP* transportation network in the regional travel forecasting model reveals where there are likely to be deficiencies in the transportation system over the longer term. Locations where future traffic volumes exceed MTP system capacity require an analysis of remedial measures to solve these anticipated deficiencies and an analysis of financial feasibility.

The list (overleaf) is of the major transportation improvements[1] which have been incorporated into the *MTP* transportation network for Clark County. These listed projects are identified in the Metropolitan Transportation Plan needs analysis and included in the air quality conformity analysis as required by the federal Clean Air Act Amendments and Washington Clean Air Act[2]. The *2000-2002 Transportation Improvement Program for Clark County* is consistent with this list.

1 Additional highway lanes, additional or improved interchanges, construction of new highway segments, expanded transit service.

2 Chapter 70.94 RCW.

2020 MTP TRANSPORTATION NETWORK:
IMPROVEMENTS ASSUMED IN REGIONAL TRAVEL FORECASTING MODEL

NOTE: Projects marked in **bold** are designated regional transportation system; *Italicized projects are local system*

Facility	Cross Street	Improvements
A. PROJECTS UNDER CONSTRUCTION/FULLY FUNDED		
I-5	**Main Street to NE 78th St**	**Widen, 3 lanes each direction; reconstruct Main Street Interchange; reconstruct 78th Street Interchange (urban design)**
I-5	**78th St to Salmon Creek**	**Widen, 3 lanes each direction [this project was completed in Fall 1996; 3rd lane will open when I-5 widening is complete]**
I-205	**At SR-500 Interchange**	**Extend I-205 off-ramp; expand to two lane off-ramp**
Mill Plain	**Mill Plain Extension (west)**	**Extension westward on new alignment from City of Vancouver to access Port of Vancouver. 2 lanes each direction with center left turn lane. Includes extension of NW 26th Av.**
Fourth Plain	**Hazelwood to Falk**	**Widen to include center left turn lane**
Fisher's Landing Park and Ride		**New facility** **Phase I: 560 +/- spaces** **Future Phase: additional spaces as needed**
MTP LIST		
B. STATE HIGHWAY SYSTEM (also, see HCT system)		
I-5	**Interstate Bridge**	**I-5 Trade Corridor Study and pre-design engineering for new Interstate Bridge**
I-5	**Salmon Creek to I-205**	**Widen, 3 lanes each direction**
I-5	**At NE 134th Street Interchange**	**Reconstruct interchange (diamond interchange)** (Subject to I-5/I-205 North Corridor Study recommendations)
I-5	**At NE 179th Street Interchange**	**Interchange reconstruction** (Subject to I-5/I-205 North Corridor Study recommendations)
I-5	**At NE 219th Street Interchange**	(Subject to I-5/I-205 North Corridor Study recommendations)
I-5/Hwy 99 Corridor		**Intelligent Transportation Corridor** (Study complete; implementation will allow traffic diversion from I-5 to Highway 99 as needed)
I-5	**NE 134th Street to NE 319th Street**	**Pre-design engineering for auxiliary lanes, new interchanges, and new SR-502 corridor** (Subject to I-5/I-205 North Corridor Study recommendations)
I-205	**Ellsworth**	**Add southbound on-ramp to I-205 from Ellsworth**
I-205	**NE 18th St/Burton Rd**	**Addition of Split Diamond Interchange with I-205 auxiliary lanes and frontage roads** (Subject to I-205 Strategic Corridor Pre-Design Study recommendations)
I-205	**Ramp from I-205/Mill Plain to NE 112th Ave**	**Flyover ramp to accommodate left turn movements and improved circulation system** (Subject to I-205 Strategic Corridor Pre-Design Study recommendations)
SR-14	**Brady Rd/SE 192nd Av**	**Interchange Addition, Brady Rd realignment**

2020 MTP TRANSPORTATION NETWORK:
IMPROVEMENTS ASSUMED IN REGIONAL TRAVEL FORECASTING MODEL

NOTE: Projects marked in **bold** are designated regional transportation system; *Italicized projects are local system*

Facility	Cross Street	Improvements
SR-14	**NW 6th Av (Camas) to 32nd St (Washougal)**	**Widen, 2 lanes each direction and pre-design for additional interchanges (SR-500, 15th, 27th/32nd)**
SR-500	**At St John's Blvd**	**Construct Interchange**
SR-500	**At 42nd Av**	**Grade Separation**
SR-500	**At 54th Av**	**Grade Separation**
SR-500	**At Thurston Way**	**Construct Interchange**
SR-500	**At NE 112th Av**	**Construct Interchange**
SR-500	**At SR-503**	**Construct Left-turn flyover ramp for westbound SR-500 traffic**
SR-500	**NE 121st Av to NE 141st Av**	**Intersection Improvements**
SR-500	**Ward Rd to NE 162nd Av**	**Widen, 2 lanes each direction**
SR-501 (Fourth Plain)	**Fruit Valley Rd to Mill Plain Extension**	**Construct left turn lane to make 5-lane total width; intersection improvement**
SR-502	**I-5/NE 179th St to Duluth**	**Widen, 2 lanes each direction with center left tun lane** (Subject to I-5/I-205 North Corridor Study recommendations)
SR-502	**Duluth to Dollars Corner (NE 72nd Av)**	**Widen, 2 lanes each direction with center left turn lane**
SR-502	**Dollars Corner (NE 72nd Av) to Battle Ground (west city limits)**	**Widen, 2 lanes each direction with center left turn lane**
SR-502	**Battle Ground (west city limits) to SR-503**	**Widen, 2 lanes each direction with center left turn lane**
SR-503	**Lewisville Park Vicinity**	**Construct Climbing Lanes**
SR-503	**North county, rural area, north of Lewisville.**	**Risk mitigation at selected locations in rural area to re-align curves and widen shoulders.**
C. OTHER ARTERIAL AND COLLECTOR SYSTEM		
3rd Av, Camas	**Crown Rd to east City Limits**	**Widen, to add continuous center left turn lane**
38th Av, Camas	*Bybee to Astor*	*Widen, to add center left turn lane*
Mill Plain	**Extension east from SE 164th Av to SE 1st St**	**Construct on new alignment. 2 lanes each direction with center left turn lane; bike lanes; sidewalks.**
SE 1st St	**SE 164th Av to 192nd Av**	**Widen, 2 lanes each direction with center left turn lane; bike lanes; sidewalks**
SE 1st St/NW Lake Rd	**SE 192nd Av to Parker Street**	**Widen, 2 lanes each direction with center left turn lane; bike lanes; sidewalks**
SE 1st St/NW Lake Rd	**Parker Street to NW Lacamas Drive**	**Widen, to add center left turn lane**
SE 7th St	*Chkalov to SE 136th Av*	*Widen, to add center left turn lanes*
SE 10th St	*Ellsworth to I-205*	*Widen, 2 lanes each direction*
NE 18th St	**NE 87th Av to NE 97th Av**	**Construct on new alignment. 1 lane each direction with center left turn lanes**
NE 18th St	**NE 97th Av to NE 138th Av**	**Widen to 3 lanes; 1 lane each direction with center left turn lane (NE 97th to NE 105th Av)** **Widen to 5 lanes, 2 lanes each direction with center left turn lane and intersection improvements (from NE 105th to NE 138th Av)**

2020 MTP TRANSPORTATION NETWORK:
IMPROVEMENTS ASSUMED IN REGIONAL TRAVEL FORECASTING MODEL

NOTE: Projects marked in **bold** are designated regional transportation system; *Italicized projects are local system*

Facility	Cross Street	Improvements
NE 18th St	**NE 138th Av to NE 162nd Av**	**I: Widen to 3 lanes; 1 lane each direction with center left turn lane II: Widen to 5 lanes, 2 lanes each direction with center left turn lane and intersection improvements**
Burton Rd	**Andresen to 86th Avenue**	**New alignment. 3 lanes, 1 lane each direction with center left turn lane**
Burton Rd	**86th to NE 112th Av**	**Widen to add center left turn lane and intersection improvements**
Burton Rd	**NE 112th to NE 142nd Av**	**Widen to add center left turn lane and intersection improvements**
Burton Rd	**NE 142nd Av to NE 162nd Av**	**Widen to add center left turn lane and intersection improvements**
NE 49th St	*NE 112th Av to 122nd Av*	*Widen, 2 lanes each direction and intersection improvements*
NE 49th St	*NE 122nd Av to 137th Av*	*Widen, to add center left turn lanes*
Fourth Plain	**NE 102nd to SR-503**	**Widen, 2 lanes each direction with center left turn lane**
NW 78th St	**Lakeshore to NW Hazel Dell Av**	**Widen, 2 lanes each direction with center left turn lane; bike lanes and sidewalks.**
NE 63rd St	*NE Andresen Rd to NE Covington Rd*	*Widen to add center left turn lane; bike lanes; sidewalks.*
NE 76th St	**NE 107th Ave to NE 117th Ave**	**Widen to add center left turn; bike lanes; sidewalks.**
NE 76th St	**NE 117th Ave to NE 142nd Ave**	**Widen to add center left turn; bike lanes; sidewalks.**
NE 78th St	*Ward Rd to NE 162nd Ave*	*Widen; add shoulders and center left turn lane at intersections*
Covington Rd	*Fourth Plain to NE 76th St*	*Widen, 2 lanes each direction, center left turn lane, bike lanes, sidewalks. Phase I, Fourth Plain to NE 102nd Ave. funding is obligated*
Padden Parkway West Leg	**NE 53rd Av (at 78th St/Padden) to NE 83rd St extending to Andresen Rd**	**Construction on new alignment 2 lanes each direction**
Padden Parkway	**I-205 to NE 94th Ave and I-205 to Andresen Rd**	**Widen, 2 lanes each direction with bike/pedestrian trail.**
Padden Parkway, East Leg	**SR-503 to Ward Rd**	**Construction on new alignment 2 lanes each direction**
Padden Parkway	**At SR-503**	**Diamond Interchange.**
Ward Road	**Fourth Plain (SR-500) to NE 88th Street**	**Widen, 2 lanes each direction with center left turn lane; sidewalks; bike lanes.**
Ward Rd/172nd Ave Corridor	*South of Davis to NE 119th St*	*Realign, use of 172nd Ave for through traffic from NE 96th St to NE 119th Street; install turn lanes.*
NE 117/119th St	**Hwy 99 to 26th Av.**	**Realign 119th St (East of Hwy 99) with 117th St (West of Hwy 99). 3-lane road; bike lanes; sidewalks.**
NW 119th St	*NW 7th Av to Hazel Dell Av*	*Construct new minor arterial road segment*
NE 134th St	**Rockwell Drive to WSU Entrance**	**Widen, 2 lanes each direction with center left turn lane; bike lanes; sidewalks.**

2020 MTP TRANSPORTATION NETWORK:
IMPROVEMENTS ASSUMED IN REGIONAL TRAVEL FORECASTING MODEL

NOTE: Projects marked in **bold** are designated regional transportation system; *Italicized projects are local system*

Facility	Cross Street	Improvements
NE 139th St	*NE 20th Ave to NE 29th Ave*	*Widen to add center left turn lane; bike lanes; sidewalks.*
NE 154th St	*NE 10th Av to NE 20th Av*	*New road, 1 lane each direction overpass to I-5.*
NW 179th St	**I-5 to Krieger Rd**	**Widen, 2 lanes each direction (I-5 to NW 5th Av), 1 lane each direction (NW 5th Av to NW 11th Av); bike lanes; sidewalks**
NE 179th St	**NE 10th to NE 50th Av**	**Widen to add center left turn lane; bike lanes; sidewalks.**
NE 179th St	**NE 50th Av to Cramer Rd**	**Widen to add center left turn lane.**
NE 179th St	**Cramer Rd to SR-503**	**New roadway, 1 lane each direction with shoulders.**
NE 199th St	*SR-503 to Battle Ground Eastern city limits*	*Widen to include center left turn lane; sidewalks.*
Lakeshore Ave/NW 36th Av	**78th St to Bliss Road**	**Widen; add center left turn lane, bike lanes and sidewalks**
Fruit Valley Rd	**34th Street to 78th St**	**Widen to add center left turn lane, bike lanes and sidewalks.**
NW 11th/16th Aves	*NW 99th St to NW 119th St*	*Widen to add center left turn lane at intersections; sidewalks*
NW 11th Av	*NW 139th to 179th St*	*Widen*
NE Hazel Dell Ave	*NE 99th St to NE 114th St*	*Widen to add center left turn lane; bike lanes; sidewalks.*
NE 10th Av	*NE 134th to NE 154th St*	*Widen to add center left turn lanes at intersections*
NE 10th Av	*SR-502 to Carty Rd*	*Widen to add center left turn lane at intersections*
Main St	**5th St to McLoughlin Blvd**	**Convert to 2-way traffic**
NE 15th Av	*NE Union Rd to NE 179th St*	*Widen existing facility and add new 3-lane sections; bike lanes; sidewalks*
NE Hwy 99	**NE 20th Avenue to NE 134th St**	**Realign Hwy 99 to provide north-south movement on NE 20th Ave. 2 lanes each direction with center left turn; bike lanes; sidewalks. Replace bridge over I-205**
NE 20thAv	*NE 134th St to NE 154th St*	*Widen; 2 lanes each direction with center left turn lane*
NE 20th Av	*NE 154th St to NE 29th Av*	*Extend NE 20th Av; 1 lane each direction*
NE 25th Ave	*NE 78th St to NE 99th St*	*Widen to add center left turn lane; bike lanes; sidewalks.*
NE 29th Av	*NE 134th St to NE 179th St*	*Widen to add center left turn lane*
NE Salmon Creek Av	*NE 29th to NE 50th Av*	*Widen to add center left turn lane*
NE 32nd/33rd Aves	*NE 99th St to NE 104th St*	*New road for local access*
St John's	**NE 50th Av to 72nd Av**	**Widen, 2 lanes each direction with center left turn; bike lanes; sidewalks.**
NE 72nd Ave	**St John's to S of NE 99th St**	**Widen to add center left turn lane**
NE 72nd Av	**NE 199th St to NE 219th St**	**Widen to include turn lanes at intersections; improve shoulders.**
NE 87th Av	**Mill Plain to Fourth Plain**	**Extension on new alignment. 1 lane each direction and center left turn lane at intersections**
Ellsworth	*SE 10th St to SR-14*	*Widen, 2 lanes each direction*

2020 MTP TRANSPORTATION NETWORK:
IMPROVEMENTS ASSUMED IN REGIONAL TRAVEL FORECASTING MODEL

NOTE: Projects marked in **bold** are designated regional transportation system; *Italicized projects are local system*

Facility	Cross Street	Improvements
NE 112th Av	**Mill Plain/Chkalov to NE 28th St**	**Widen, 2 lanes each direction with center left turn lane; intersection improvements**
NE 112th Av	**At NE 49th St**	**Intersection Improvements**
NE 138th Av	*NE 18th to NE 28th St*	*Widen, 2 lanes each direction with sidewalks and bike lanes*
NE 138th Av	*NE 28th to NE 39th St*	*Widen, 1 lane each direction with center left turn lane, sidewalks and bike lanes*
NE 137th Av	*NE 39th to NE 49th St*	*Widen, 1 lane each direction with center left turn lane, sidewalks and bike lanes*
NE 137th Ave	*Fourth Plain to NE 76th St*	*Widen to add center left turn; bike lanes; sidewalks.*
NE 137th Av	*NE 76th to NE 99th St*	*New segment, 1 lane each direction with center left turn lane and shoulders*
SE 164th Av	**Mill Plain to SE 1st St**	**Widen, 2 lanes each direction, center left turn lane**
SE 162nd Av	**NE 39th St to Ward Road**	**Widen, 2 lanes each direction and center left turn lane**
SE 192nd Av	**SR-14 to SE 15th St**	**Construct, limited access 2 lanes each direction; bike and pedestrian path.**
SE 192nd Av	**SE 15th St to SE 1sst St**	**Widen, 2 lanes each direction; bike and pedestrian path.**
SE 192nd Av	**SE 15th St to NE 18th St**	**Widen, 2 lanes each direction; bike and pedestrian path.**
Sierra Street	*NW 33rd Av to NW 38th Av*	*Construct, 1 lane each direction*
NW Leadbetter Rd	*NW Lake Rd to NW Parker St*	*Construct new road, 1 lane each direction*
D. TRANSIT		
Fixed-route System Expansion		**Service Hours (both expansion of route system and frequency of service on certain routes)** **[per C-TRAN's current *Service and Financial Plan*]** **1999 Annual Service Hours: 309,000** **2020 Annual Service Hours: 440,000+/- (average 1.8% growth per year)**
Capital Equipment Needs	**Bus Purchases**	**To meet service hours expansion and to replace old fleet**
Central County Park and Ride		**New facility (415+/- spaces)**
I-5 Corridor Park and Rides		**New facilities at I-5 Visitors' Center location and in vicinity of NE 99th St., and at NE 179th Street.**
Seventh Street Transit Center		**Expansion of Existing Facility**
C-TRAN HQ		**Expansion of HQ Facility**
HIGH CAPACITY TRANSPORTATION CORRIDOR		
I-5		**LRT constructed to Expo Center, Portland** **Frequent bi-state bus service**

Projects listed above include both projects **on** the regional transportation system as well as projects **off** the regional system which have been included in the regional travel forecasting model network and have therefore been included in the regional air emissions analysis to meet the requirements of the federal Clean Air Act Amendments and Washington Clean Air Act.

In addition to the listed projects, the RTP is supportive of **MAINTENANCE, PRESERVATION, SAFETY, PEDESTRIAN, BICYCLE, ENHANCEMENT, TRANSPORTATION SYSTEM MANAGEMENT (TSM), TRANSPORTATION DEMAND MANAGEMENT (TDM)** and any other project for which a need has been demonstrated through the regional transportation planning process that will serve to enhance the efficiency and operation of the regional transportation system.

MAINTENANCE	
	Maintenance work ensures a safe, reliable and efficient transportation system on a day to day basis with such activities as pothole filling, repair of damaged bridges, incident response, maximizing operational efficiency by signal timing, snow clearing, vegetation planting and clearing, drainage and fence maintenance and litter removal. The MTP supports regional system maintenance work identified by WSDOT and local agencies.
PRESERVATION	
	Preservation projects ensure that investment in the regional transportation system is protected. Specific projects include repaving of highways, refurbishing rest areas and bridge rehabilitation. Needs and projects are identified by local agencies and WSDOT through such programs as the Highway Performance Monitoring System (HPMS), ISTEA-required Pavement Management System (PMS) and Bridge Management System (BMS). Clark County bridge needs are listed in Appendix B.
SAFETY	
	Needs identified through the ISTEA-required Safety Management System (SMS) and local analysis.
PEDESTRIAN AND BICYCLE MODE	
	Needs identified through state and local planning programs including recommendations from the Clark County Bicycle Advisory Committee, GMA plans and the *Clark County Trails and Bikeway System Plan* (December 1992; Clark County). Notable pedestrian and bicycle projects in Clark County include completion of the City of Vancouver's Columbia River Waterfront Trail, the Discovery Trail, the Columbia River/Evergreen Highway Trail, Hazel Dell Avenue bike lanes and SE 164th Avenue bike lanes. Also of regional significance is improvement of pedestrian and bicycle facilities which will improve access to transit facilities. Bike racks are already provided on C-TRAN fixed-route buses and bike lockers are provided at C-TRAN Transit Centers and Park and Rides. The bike rack and locker program will continue.
TRANSPORTATION SYSTEM MANAGEMENT	
	Potential TSM solutions are outlined in the State's *Statewide Multimodal Transportation Plan, System Plan Component* as well as local Growth Management plans. They include projects to interconnect traffic signals, to optimize signal timing and to ramp meter certain interchange ramps on the interstate system. Projects such as the Mill Plain Adaptive Traffic Control System (between 104th Avenue and Hearthwood Boulevard) and the Transportation Information, Management, and Control System (TIMACS) are already programmed for implementation.
TRANSPORTATION DEMAND MANAGEMENT	
	Demand management activities are determined through the Commute Trip Reduction program ongoing in the Clark County region.

Should projects in the categories listed above require state or federal funding, they are brought forward to RTC as the region's MPO to carry out a coordinated decision-making process whereby projects are prioritized and selected for funding. Regional level air quality conformity analysis is prepared by RTC and project level conformity analysis, where required, is prepared by RTC for local projects and by WSDOT for State projects.

APPENDIX A-1

MTP PROJECT PRIORITIZATION: PROJECT RANKING
QUANTITATIVE ANALYSIS OF POLICY DIRECTIVES AND EVALUATION CRITERIA

Facility	Project Extent	Description	Estimated Project Cost	% Funded*	Empl. Growth: 1996-2017 Non-Retail Weighted by Trips	Employment: 2017 Total Non-Retail Weighted by Trips	LOS Volume to Capacity Ratio: 2003 PM Pk. Hr.	Auto Trips: PM Pk. Hr.	Costs: per 2017 PM Pk. Hr. Trip	Delay: 2017 No-Build PM Pk. Hr.	Freight Tonnage Category	Commuter Use: 2017 PM Pk. Hr. Work Trips at Peak Load Point
Interstate Projects:												
I-5	Main Street to NE 134th	Main & 78th St interchanges Widen to 3 lanes ea. dir.	$78,200,000	60%	278	1,001	1.0 (F)	10,661	$7,335	1,537	T1	2,915
I-205	Mill Pl/NE 18th/ Burton Rd	Flyover + new interchange	$65,915,000	0%	254	818	1.6 (F)	2,253	$29,257	N/A	T1	951
I-5	NE 134th Street	Reconstruct interchange	$31,210,000	0%	212	701	.68 (C)	2,516	$12,405	18	T1	792
I-5**	NE 179th Street	Reconstruct interchange	$18,265,000	0%	230	641	1.0 (F)	1,558	$11,723	61	T1	924
State Projects:												
SR-14/192nd Av	SR-14 to NW 18th St	New interchange New: 2 lanes ea. dir. + CLT (SR-14 to SE15th) Widen: 2 lanes ea. dir.+ CLT (SE15th to 18th)	$46,860,000	87%	372	758	N/A	2,891	$16,209	N/A	T2	661
SR-500***	112th Av/SR-503	New interchange at 112th Av Ramp at SR-500/SR-503	$28,363,000	69%	324	1,083	1.4 (F)	5,404	$5,249	N/A	T3	1,147
SR-14	NW 6th Av to 32nd St	Widen: 2 lanes ea. dir. New interchange at SR-500	$20,000,000	2%	317	869	.78 (D)	2,381	$8,400	100	T2	677
SR-500	Ward Rd to 162nd Av	Widen: 2 lanes ea. dir.	$3,200,000	100%	252	620	1.2 (F)	2,332	$1,638	22	T3	698
SR-502**	I-5 to SR-503	Widen: 2 lanes ea. dir. + CLT	$42,415,000	28%	177	515	1.0 (F)	1,910	$22,207	69	T3	785
Local Projects:												
192nd Avenue	See SR-14/192nd Project in State section above											
Burton Rd	Andresen to NE 162nd Av	New: 2 lanes ea. dir. + CLT (Andresen to 86th) Widen: 2 lanes ea. dir.+ CLT (86th to 162nd)	$24,000,000	39%	241	899	1.3 (F)	4,801	$4,999	518	N/A	460

MTP PROJECT PRIORITIZATION: PROJECT RANKING
QUANTITATIVE ANALYSIS OF POLICY DIRECTIVES AND EVALUATION CRITERIA

Facility	Project Extent	Description	Estimated Project Cost	% Funded*	Empl. Growth: 1996-2017 Non-Retail Weighted by Trips	Employment: 2017 Total Non-Retail Weighted by Trips	LOS Volume to Capacity Ratio: 2003 PM Pk. Hr.	Auto Trips: PM Pk. Hr.	Costs: per 2017 PM Pk. Hr. Trip	Delay: 2017 No-Build PM Pk. Hr.	Freight Tonnage Category	Commuter Use: 2017 PM Pk. Hr. Work Trips at Peak Load Point
Padden Pkway	NE 53rd Av to Ward Rd	Widen: 2 lanes ea. dir. + CLT	$25,630,000	77%	194	649	1.0 (F)	3,513	$7,296	12	T3	529
SE 164/162 Av	Mill Plain to Fourth Plain	Widen: 2 lanes ea. dir. + CLT	$19,062,000	61%	211	472	1.0 (F)	3,873	$4,922	436	T3	695
SE 1st	SE 164th Av to Leadbetter	Widen: 2 lanes ea. dir. + CLT	$25,000,000	12%	301	458	.46 (A)	2,277	$10,979	13	T3	240
NE 18th St	NE 86th to NE 162nd Av	New: 1 lane ea. dir. + CLT (86th to 105th) Widen: 2 lanes ea. dir. + CLT (105th to 162nd)	$23,199,000	0%	230	878	1.0 (F)	4,623	$5,018	144	N/A	782
NE 179th St	NW 11th to NE 50th Av	Widen: 1 lane ea. dir. (11th to 2nd) Widen: 2 lanes ea. dir. + CLT (2nd to 29th) Widen: 1 lane ea dir. + CLT (29th to 50th)	$17,500,000	8%	160	335	1.1 (F)	1,483	$11,800	197	N/A	265

NOTE: all projects listed above are needed in the 20-year horizon. Priorities will be re-examined periodically.

* Assumes Ref. 49 funding for certain projects. Estimated project costs are subject to change as projects become more clearly defined through Preliminary Engineering (PE) and Right of Way (RW) phases.

** Transportation needs in the I-5 North corridor will be examined in detail in the WSDOT study scheduled to conclude in late 1999. The need for an I-5/NE 219th St. interchange will be addressed in the Study.

*** SR-500/NE 112th Avenue interchange is a WSDOT Safety Category Project. SR-500/SR-503 ramp is a WSDOT Mobility Category Project

APPENDIX A-2

MTP Strategies, Projects to Preserve System Capacity including Transportation Demand Management (TDM) Strategies			
Facility/ Strategy	**Project**	**Estimated Cost**	**Description**
Transit	Increase Transit Service	$350,000 per year	Improve transit service per C-TRAN/s Transit Development Plan (TDP)
Pedestrian	Improve Pedestrian Access to Transit		Pedestrian improvements provided through highway building projects (improved design standards), Transportation Improvement Program of local jurisdictions.
TDM	Vanpool Program	$540,000	Increase subsidy for vanpool program participants. 120 vanpools operated during the I-5 span closure in September 1997.
TDM	Carpool Program	$50,000	To provide for incentive
TDM	Telecommuting/ Teleworking	$2,500	Fund employer outreach program
TDM	Flexible Work Hours	$2,500	Fund employer outreach program
TSM	Intelligent Transportation System (ITS): Traffic Management Center	$10,000,000	Establish Traffic Management Center for Clark County and consider links to Portland's Traffic Management Center

CLEAN AIR CONFORMITY DETERMINATION

AIR QUALITY CONFORMITY STATEMENT

The Metropolitan Transportation Plan for Clark County is found to contribute to emission reductions and is **found to be in conformity with the Federal Clean Air Act as amended in 1990 and the Washington Clean Air Act** (chapter 70.94 RCW). The MTP does not adversely impact the existing SIP and is in conformity with it. All regionally significant transportation improvement projects are included in the regional travel forecasting model for purposes of air quality conformity analysis. A brief description of air quality conformity analysis methodology and results table follows.

AIR QUALITY CONFORMITY METHODOLOGY AND RESULTS

The Southwest Washington Air Pollution Control Authority (SWAPCA) has developed, as supplements to the State Implementation Plan, two Maintenance Plans; 1) for Carbon Monoxide (CO), and 2) for Ozone (O_3). In October, 1996 the CO Maintenance Plan and in April 1997 the Ozone Maintenance Plan were approved by the Environmental Protection Agency (EPA). Mobile source strategies contained in the Maintenance Plans were endorsed for implementation by the RTC Board of Directors (Resolution 02-96-04).

The MTP must comply with the mobile emissions budgets specified in the Maintenance Plans. The test is designed to prevent violation of the National Ambient Air Quality Standards (NAAQS); transportation emissions are not allowed to exceed levels relied upon in the Maintenance Plan demonstration. To ensure consistent assumptions, the same methodology used to develop mobile emissions budgets for the Maintenance Plans is used in the MTP air quality conformity process.

The air quality conformity analysis relies on travel data for three time periods (the AM 1-hour, the PM 2-hour, and the rest-of-the-day) and is based on use of *emme/2*, regional travel model software, and on use of Mobile 5ah to determine emissions rates as part of the emissions calculations. Input assumptions for Mobile 5ah were received from the Southwest Washington Air Pollution Control Authority (SWAPCA) and the Oregon State Department of Environmental Quality (ODEQ). Hot stabilized emissions are calculated for each link in the system.

Each of the emitted gases (Carbon Monoxide (CO), Hydrocarbons (HC) and Nitrogen Oxides (NOx), has several categories of emission that make up the all-day total; hot starts, cold starts, and hot stabilized emissions. In addition, HC emissions also include hot soaks (which occur at the end of a trip in the destination zone), and diurnal emissions (those which occur during the day as rising temperatures cause vehicles to produce emissions through evaporation). CO is calculated for winter conditions, and HC and NOx are computed for summer conditions. The emissions calculations includes emissions caused by intra-zonal trips (trips which begin and end in the same Transportation Analysis Zone (TAZ). All outputs were seasonally adjusted based on EPA/SWAPCA guidance. Emissions estimates include credits taken for the following clean air programs: activities under the Commute Trip Reduction ordinance and Clean Air Action Days (free transit service and public education).

2020 METROPOLITAN TRANSPORTATION PLAN: AIR QUALITY CONFORMITY RESULTS

Year		**Winter Carbon Monoxide** *(in pounds per day)*	**Hydrocarbons (HC)** *(in tons per day)*	**Nitrous Oxides (Nox)** *(in tons per day)*
2000	MTP Emissions Estimate	263,000	11	12
	Transportation Budget	*300,000*	*11*	*14*
2010	MTP Emissions Estimate	218,000	8	12
	Transportation Budget	*260,000*	*10*	*12*
2020	MTP Emissions Estimate	253,000	9	11
	Transportation Budget	*260,000*	*12*	*14*

APPENDIX B

WSDOT CLARK COUNTY REGION: TWENTY YEAR BRIDGE NEEDS ON STATE SYSTEM						
Bridge #	**Bridge Name**	**Mile Post**	**Year Built**	**Deck Area (Sq. Ft.)**	**Description**	**Estimated Cost ($)**
Reduce Risk of Naturally-Caused Catastrophic Failures (WSDOT Service Objective H-19) :						
503/16	Cedar Creek	20.67	1958	700	Waterway Adequacy	185,000
Preserve Structural and Operational Integrity (WSDOT Service Objective H-16):						
5/1E	Columbia R. Interstate	0.00	1916	134,330	Movable Bridge, Rehabilitation	81,000
5/1W	Columbia R. Interstate	0.00	1958	141,520	Movable Bridge, Rehabilitation	81,000
5/22E	Salmon Creek	6.32	1959	11,067	Paint Bridge	29,000
5/22W	Salmon Creek	6.32	1959	10,710	Paint Bridge	29,000
5/23	NE 129th St u/c	6.98	1961	4,940	Deck Overlay	222,000
5/36E	E Fork Lewis R.	18.21	1940	40,896	Paint Bridge	133,000
5/36W	E Fork Lewis R.	18.21	1969	42,288	Paint Bridge	126,000
5/40W	Lewis R.	19.83	1940	62,880	Paint Bridge	461,000
5/40E	Lewis R.	19.87	1968	51,648	Paint Bridge	335,000
14/25	W. Camas Slough	12.62	1964	31,140	Paint Bridge	193,000
14/38	Lawton Creek	20.90	1925	1,056	Future Bridge Replacement	279,000
501/8E	NP Rwy SPS Rwy o/c	1.60	1962	14,160	Paint Bridge	39,000
501/20	Gee Creek	17.66	1965	1,608	Paint Bridge	10,000
503/6	Salmon Creek	5,38	1923	1,1775	Narrow Bridge	264,000
503/17	Chelatchie Creek	20.76	1953	930	Paint Bridge	4,000
503/26	Lewis R. Yale	27.84	1932	7,786	Paint Bridge	61,000
Modify or Replace Bridges with Vertical Underclearances Less than 15'6" (WSDOT Service Objective H-35):						
5/24	NE 134th St u/c, Co. Rd	7.24	1959	4,940	Low Vertical Clearance	1,304,000
Modify or Replace Bridges to Carry Legal Overloads (WSDOT Service Objective H-19):						
503/26	Lewis R., Yale	27.84	1932	7,786	Overload Restr.	3,640,000

Clark County: Bridge Projects		
La Center Bridge #21	**La Center Vicinity**	**Replace Bridge.**
Heisson Bridge #100	*Bridge*	*Replace bridge; shoulders for bicycles and pedestrians.*

METROPOLITAN TRANSPORTATION PLAN: GLOSSARY

ABBREVIATION	DESCRIPTION
AA	Alternatives Analysis
AADT	Annual Average Daily Traffic
AASHTO	American Association of State Highway and Transportation Officials
AAWDT	Annual Average Weekday Traffic
ADA	Americans with Disabilities Act
ADT	Average Daily Traffic
AIP	Urban Arterial Trust Account Improvement Program
APTA	American Public Transit Association
AQMA	Air Quality Maintenance Area
AVO	Average Vehicle Occupancy
BEA	Bureau of Economic Analysis
BMS	Bridge Management System
CAA	Clean Air Act
CAAA	Clean Air Act Amendments
CBD	Central Business District
CFP	Community Framework Plan
CIT	Community Involvement Team
CM/AQ	Congestion Mitigation/Air Quality
CMS	Congestion Management System
CO	Carbon Monoxide
CREDC	Columbia River Economic Development Council
CTPP	Census Transportation Planning Package
CTR	Commute Trip Reduction
C-TRAN	Clark County Public Transportation Benefit Area Authority
DCTED	Washington State Department of Community, Trade and Economic Development
DEIS	Draft Environmental Impact Statement
DEQ	Oregon State Department of Environmental Quality
DLCD	Oregon Department of Land Conservation and Development
DNS	Determination of Non-Significance
DOE	Washington State Department of Ecology
DOL	Washington State Department of Licensing
DOT	Department of Transportation
DS	Determination of Significance
EAC	Enhancement Advisory Committee
ECO	Employee Commute Options
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
ETRP	Employer Trip Reduction Program
FEIS	Final Environmental Impact Statement
FFY	Federal Fiscal Year
FHWA	Federal Highways Administration
FONSI	Finding of No Significant Impact
FTA	Federal Transit Administration
FY	Fiscal Year
GIS	Geographic Information System
GMA	Growth Management Act
HCM	Highway Capacity Manual
HCT	High Capacity Transportation
HOV	High Occupancy Vehicle
HPMS	Highway Performance Monitoring System
I/M	Inspection/Maintenance
IMS	Intermodal Management System
IPG	Intermodal Planning Group

METROPOLITAN TRANSPORTATION PLAN: GLOSSARY

ABBREVIATION	DESCRIPTION
IRC	Intergovernmental Resource Center
ISTEA	Intermodal Surface Transportation Efficiency Act (1991)
ITS	Intelligent Transportation System
IV/HS	Intelligent Vehicle/Highway System
JPACT	Joint Policy Advisory Committee on Transportation
LAS	Labor Area Summary
LCDC	Oregon Land Conservation and Development Commission
LCP	Least Cost Planning
LMC	Lane Miles of Congestion
LOS	Level of Service
LPG	Long Range Planning Group
LRT	Light Rail Transit
MAB	Metropolitan Area Boundary
MIA	Major Investment Analysis
MP	Maintenance Plan (air quality)
MPO	Metropolitan Planning Organization
MTP	Metropolitan Transportation Plan
MUTCD	Manual on Uniform Traffic Control Devices
NAAQS	National Ambient Air Quality Standards
NCPD	National Corridor Planning and Development Program
NEPA	National Environmental Policy Act
NHS	National Highway System
NOX	Nitrogen Oxides
O/D	Origin/Destination
ODOT	Oregon Department of Transportation
OFM	Washington Office of Financial Management
OTP	Oregon Transportation Plan
PCE	Passenger Car Equivalents
PE/DEIS	Preliminary Engineering/Draft Environmental Impact Statement
PHF	Peak Hour Factor
PM10	Fine Particulates
PMG	Project Management Group
PMS	Pavement Management System
POD	Pedestrian Oriented Development
Pre-AA	Preliminary Alternatives Analysis
PSMP	Pedestrian, Safety & Mobility Program
PTBA	Public Transportation Benefit Authority
PTMS	Public Transportation Management System
PTSP	Public Transportation Systems Program
PVMATS	Portland-Vancouver Metropolitan Area Transportation Study
RACM's	Reasonable Available Control Measures
RACT	Reasonable Available Control Technology
RID	Road Improvement District
ROD	Record of Decision
ROW	Right of Way
RPC	Regional Planning Council
RTAC	Regional Transportation Advisory Committee
RTC	Southwest Washington Regional Transportation Council
RTFM	Regional Travel Forecasting Model
RTP	Regional Transportation Plan
RTPO	Regional Transportation Planning Organization
RUGGO	Regional Urban Growth Goals and Objectives
SCP	Small City Program
SEIS	Supplemental Environmental Impact Statement

METROPOLITAN TRANSPORTATION PLAN: GLOSSARY

ABBREVIATION	DESCRIPTION
SEPA	State Environmental Policy Act
SIC	Standard Industrial Classification
SIP	State Implementation Plan
SMS	Safety Management System
SOV	Single Occupant Vehicle
SPG	Strategic Planning Group
SR-	State Route
SSAC	Special Services Advisory Committee
STIP	State Transportation Improvement Program
STP	Surface Transportation Program
SWAPCA	Southwest Washington Air Pollution Control Authority
TAZ	Transportation Analysis Zone
TCM's	Transportation Control Measures
TCSP	Transportation and Community and System Preservation Pilot Program
TDM	Transportation Demand Management
TDP	Transit Development Program
TEA-21	Transportation Equity Act for the 21st Century
TIB	Transportation Improvement Board
TIP	Transportation Improvement Program
TIPIT	Transportation Improvement Program Involvement Team
TMA	Transportation Management Area
TMS	Transportation Management Systems
TOD	Transit Oriented Development
TPAC	Transportation Policy Advisory Committee
TPP	Transportation Partnership Program
TPR	Transportation Planning Rule
Tri-Met	Tri-county Metropolitan Transportation District
TSM	Transportation System Management
UAB	Urban Area Boundary
UGA	Urban Growth Area
UGB	Urban Growth Boundary
UPWP	Unified Planning Work Program
V/C	Volume to Capacity
VHD	Vehicle Hours of Delay
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compounds
WAC	Washington Administrative Code
WSDOT	Washington State Department of Transportation